HellermannTyton













General Product Catalogue

South Africa 2016 / 2017

Perfect Cable Management Solutions

Our Mission

HellermannTyton's mission is to provide innovative solutions, with customer satisfaction as our first priority.

We aspire, through global leadership and quality products that add value to electrical and communication networks, to be the customers' partner of choice.

We aim to achieve world class operational excellence for the benefit of our customers, our employees and the inter-action of our business with the environment.

Our Values

- Total commitment to providing customer satisfaction.
- Conducting our business with integrity.
- Excellence in quality, efficiency, innovation and reliability.
- Our employees are our most valuable asset.
  We are committed to their empowerment in an environment of openness and mutual trust.
- Caring for the environment.
- Providing safe and healthy working conditions.









Our Company

Globally, HellermannTyton is a leading manufacturer and distributor of electrical cable management solutions, used extensively in the electronic, telecommunications, aerospace, automotive and electrical industries.

The South African operation offers a wide range of products and solutions to meet a broad spectrum of applications. In addition, we have access to the invaluable experience and expertise of our world-wide group of companies, gained over many years in operation.

The head office and factory is strategically located on the N3 freeway near Sandton in Johannesburg and there are stocking branch offices in Durban, Port Elizabeth and Cape Town.

Our sales personnel and a substantial network of distributors throughout Southern Africa are constantly available to advise customers on the right choice of products, and to assist with finding solutions to any other specific needs.

Our History

In 1936 an enterprising Londoner by the name of Jack Bowthorpe started Bowthorpe Electrical Co. Limited. Two years later the company merged with Paul Hellermann of Germany.

Jack Bowthorpe was an entrepreneur at heart, and in the years that followed proved his ability to innovate and deliver quality products to support electrical installations and applications.

The Bowthorpe Hellermann partnership grew from strength to strength and today HellermannTyton is an international giant, with operations in 36 countries worldwide.

The South African company was founded in 1966 and has served the Southern African electrical and associated industries for almost 50 years.



Sales and Marketing

Our sales personnel are experienced industry professionals, well equipped to address and satisfy your requirements:

- Our modern ERP system controls and tracks all processes, from procurement of product, order intake and processing, to the final stage of dispatching goods to customers.
- Our ability to embrace change as required by our customers and the market ensures that we remain a flexible customer-focused organisation.





Manufacturing

We have over thirty years of experience in the field of plastics conversion, underwritten by:

- State-of-the-art production facilities, machinery and tooling.
- Highly trained personnel.
- Compliance with essential Quality Management Systems - ISO/TS16949:2009 & ISO 14001:2004.
- Access to leading edge technology through our group companies worldwide.





Quality Management Systems

We constantly strive to provide quality products and service, underpinned by compliance with internationally recognised standards:

- ISO 14001:2004 Environmental Management System.
- ISO/TS16949:2009 Automotive Quality Management System.
- IEC & SANS Product specific approvals.









Logistics

Our modern warehousing and logistics facilities, well-trained personnel and sophisticated ERP systems provide:

- Optimal stocking of catalogue items.
- Efficient turnaround of customer orders and other requirements.
- Flexible collection and delivery options.
- Convenient access – The head office and branches are situated near the key business centres and main arterials.



Training

Emphasis is placed on providing practical and theoretical training for personnel and customers:

- We are committed to equipping all our personnel with the necessary skills through the best training and development programmes available.
  Coupled with job specific training this enables them to provide great service and sound advice to our customers.
- Regular, specialist product and application training seminars are offered to our customers to ensure they are equipped to address the challenges presented by the highly technical nature of their work.



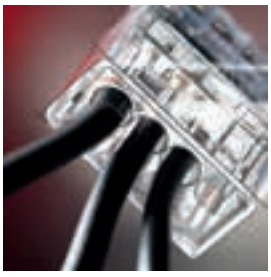
Identification Systems 1.0



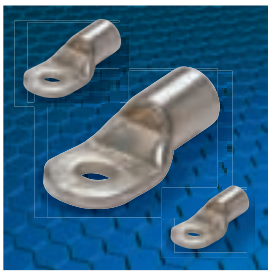
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M-BOSS

Identification Systems

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RoHS The restriction of the use of certain hazardous substances in electrical and electronic equipment

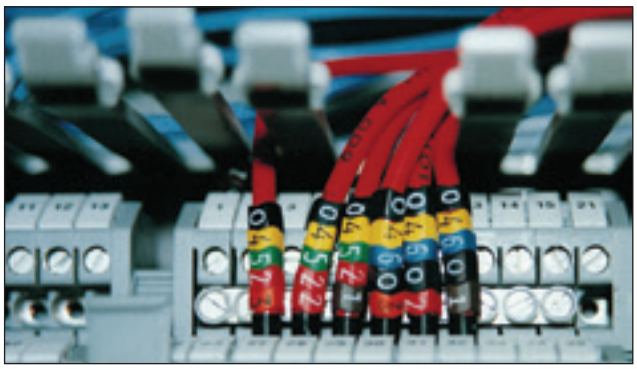
HF (halogenfree) Halogen Free

LFH (Limited Fire Hazard) Limited Fire Hazard

Helagrip

Features and Benefits

Helagrip is a versatile and cost effective cable identification system. The specially designed internal profile allows one size of marker to be fitted onto a wide range of cable diameters. Helagrip's chevron cut ensures that the markers lock together, enabling the text legend to stay in place where cable movement or vibration is likely. The flexible material ensures that Helagrip cable markers always fit securely onto the wire.



Clearly a better way to identify in confined spaces.

Application

Ideally suited to panel building, mass transit, utilities, telecommunications and electrical contracting.
Helagrip is supplied on a reel for ease of use.
Markers are available as standard in international resistor colour code and yellow material marked in black. White material marked in black is available on special order.
Characters are 0-9, A-Z and standard electrical symbols.
For smaller cables and wires it is recommended that you use the AD applicator or the TJC installation tool.



- Cable diameter 1,0 - 16.0 mm.
- Chevron end cut enables locking alignment.
- Flexible PVC (High temperature 85°C).
- Coding A-Z and 0-9.
- HG markers available, black on yellow or white.
- International colour coding.
- Standard electrical symbols.
- Standard packet of 500 or reels of 1000.



HG13M*$
- Colour
- Legend
- M-Packet / R-Reel

Features and Benefits

Helagrip Markers – Chevron cut available colour coded, black on yellow or black on white.



Examples:

Packet: 1-3 OD, Letter A, Black on Yellow = HG13MAYL
Reel: 1-3 OD, Number 4, Black on Yellow = HG13M4YL
Packet Colour Kit 09: 1-3OD = HG13MCCL09
Reel Kit: A-Z 1-3OD, Black on Yellow = HG13RYLAZ

Material Data

Material	Flexible Polyvinyl Chloride, cadmium free (PVC)
Colour	White, yellow, international resistor colour code
Flammability	Self-extinguishing
Operating Temperature	-65°C to +105°C, Intermittent +135°C
Specification	BS 2782-540B, BS 6746C, UL224, IEC 684-3-116

Ordering Information

Code	Cable Dimensions	Quantity Per		App Tools
	OD (mm)	Packet	Reel	
HG13	1,0 - 3,0	500	1000	TJC13
HG25	2,0 - 5,0	500	1000	TJC25
HG36	3,0 - 6,0	500	250	TJC36
HG49	4,0 - 9,0	250		TJC49
HG816	8,0 - 16,0	250		

All dimensions in mm. Subject to technical changes.



TJC applicator tools.

Ovalgrip Cable Markers

Features and Benefits

Ovalgrip markers have been specifically designed to mark cable and wire both before and after termination. Their oval shape means that these markers are easy to fit by hand directly onto the cable pre-termination or they can be attached as an identification flag post-termination using special marker Arrowtags. Arrowtags fitted with Ovalgrip are fastened using cable ties and can very easily be modified or removed without the need to uninstall the cable.

Sizes 50 and 85 can be used with Arrowtags for identifying larger cable bundles.

Application

Ideally suited to panel building, mass transit, utilities, telecommunications and electrical contracting.

- Flexible PVC (High temperature 85°C).
- Coding A-Z and 0-9.
- Custom marking on request.
- HO markers available, black on yellow or white.
- International colour coding.
- Standard packets of: H085 = 100, HO50 = 500
- May be fited directly on the cable or alternatively onto "Arrow Tags".



A simple idea for complex marking needs.

Material Data

RoHS

Material	Flexible Polyvinyl Chloride, cadmium free (PVC)
Colour	White, yellow, international resistor colour code
Operating Temperature	-65°C to +85°C, Intermittent +135°C
Flammability	Self extinguishing
Specification	BS 2782-540B, BS 6746C, UL224, IEC 304, IEC 757



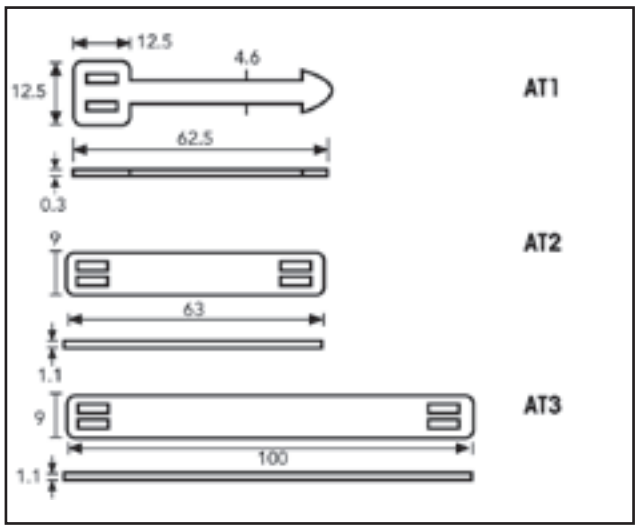




Examples

Packet : HO50,Letter A, Black on Yellow = HO50MAYL
Packet : HO85,Letter A, Black on Yellow = HO85MAYL
Packet : Colour Kit 0-9 HO50 = HO50MCC09
Packet : Kit A-Z, HO85, Black on Yellow = H854MYLAZ
Arrow Tag 1, Black = AT1BK (Only available in Black)
Arrow Tag 2, Natural = AT2NT

AT1 Arrowtags will fit 7 size 50 markers.
AT2 Arrowtags will fit 9 size 85 markers.
AT3 Arrowtags will fit 17 size 85 markers.



Ordering Information

Code	Cable Dimensions		Packaging	Arrow Tag		
	OD (mm)	$(mm)^2$	Package	Tag	Length (mm)	Characters
HO50	1,5	3,6	500	AT1	62,5	9
HO85	2,5	5,9	100	AT2	63	11
				AT3	100	19

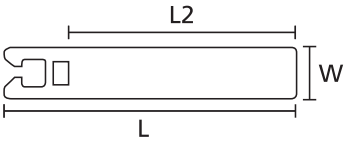
* Arrow Tags will accept Insulok Cable Ties from 2,5 - 5mm (T18 - T50 Series).

Identification Markers Q-tag

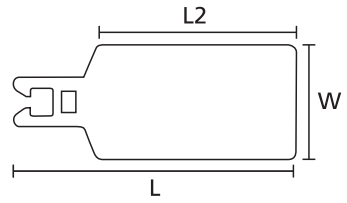
Features and Benefits

Q-tags are used to identify a cable or a cable bundle and is secured with a Q-tie. The Q-tag's flag design allows the user to quickly read or scan the printed information.
The tags can be marked by hand with a marker pen (T82 series) or with a printed adhesive label. HellermannTyton offers a complete printing solution for Q-tags:
printers, labels, ribbons, and market leading label design software; Tagprint Pro V2.

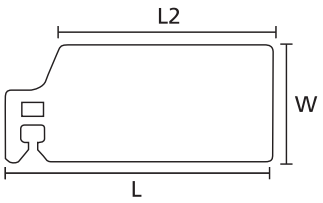
Using Q-ties and Q-tags gives users the confidence that cables and cable bundles are safely secured and the text is highly visible.



Q-tag QT7016R



Q-tag QT7040R



Q-tag QT7040S



The flagged orientation of Q-tags ensures that printed texts are easily visible.



Q-tags are avaliable in different sizes and types.



Q-tags can be labelled with pre-printed labels or written by hand.

Material Data

Material	Polyamide 6.6 (PA66)
Colour	Natural (NA),
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

RoHS

HF (halogenfree)

Technical Table

Article-No.	Type	Length (L)	Length (L2)	Width (W)	Strap Width max. (G)	Pack Cont.	Colour
151-10950	**QT7016R**	100.0	70.0	18.0	4.7	50	Natural (NA)
151-10951	**QT7040R**	100.0	70.0	42.0	4.7	50	Natural (NA)
151-10952	**QT7040S***	100.0	70.0	42.0	3.6	50	Natural (NA)
151-10953	**QT10065R**	135.0	100.0	67.0	4.7	25	Natural (NA)
Marker pens T82							
500-50820	**T82S-BK**	–	–	–	–	2	Black (BK)
500-50822	**T82R-RD**	–	–	–	–	2	Red (RD)

All dimensions in mm. Subject to technical changes.

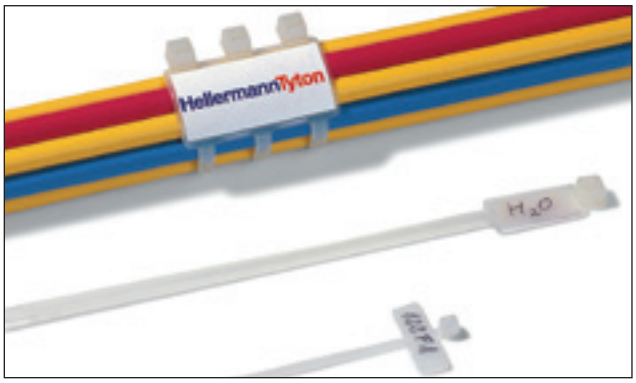
* right angled

Identification Cable Ties

Features and Benefits

One of the major benefits is the ability to both secure and identify cable bundles at different times.
These cable ties are suitable for the identification and securing of cable bundles, saving valuable installation time by using just one product to both secure and identify. They can be marked either on-site or after bundling has taken place.

They can be marked manually using the T82S series of indelible marker pens. In addition there is a large selection of labels available for marking.



One operation with two benefits.

Material Data

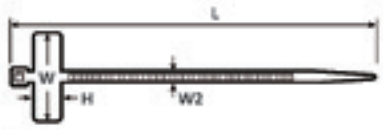
Material	Polyamide 6.6 (PA66)
Colour	Natural (NT),
	Available on request, Black (BK)
Operating Temperature	-40°C to +85°C Continuous,
	(+105°C for 500 h)
Flammability	UL94 V2

RoHS

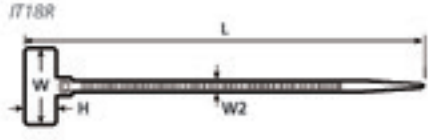
HF (halogenfree)

Application

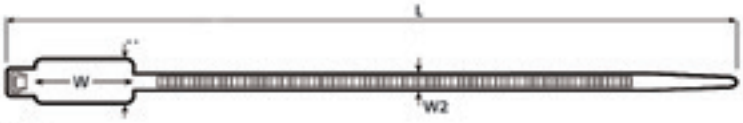
One of the major benefits is the ability to both secure and identify cable bundles at different times.



IT18R



IT18FL



IT50R

Technical Table

Code	Width (W)	Height (H)	Length (L)	Width (W2)	Bundle Ø min.	Bundle Ø max.	Colour	Material	Min. Tensile Strength (N)
IT18R	25.0	8.0	100.0	2.3	6.0	22.0	Natural (NT)	PA66	80
IT18FL	20.5	9.0	110	2.5	1.5	19.0	Natural (NA)	PA66	80
IT50R	28.0	12.9	203.0	4.6	9.5	44.5	Natural (NA)	PA66	225

All dimensions in mm. Subject to technical changes.

Marker Pens T82

Technical Table

Code	Description	Colour	Pack Cont.
500-50820	T82S-BK	Black (BK)	2
500-50822	T82R-RD	Red (RD)	2

All dimensions in mm. Subject to technical changes.

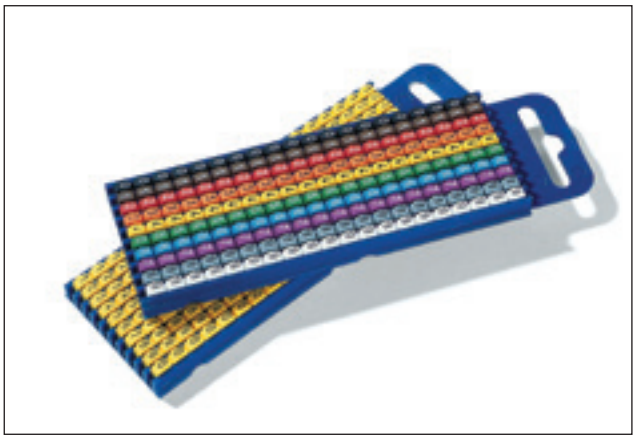


Marker pens T82S-BK and T82R-RD.

Wire Identification Clip (WIC Markers)

Features and Benefits

This fast and easy to use snap-on marker is ideal for use in areas where termination has been completed or where systems need to remain switched on.
WIC markers are especially engineered to remain in place even under continuous vibration.
The robust locking mechanism ensures that the marker legend is always visible on the cable in areas of vibration or other cable movement.
WIC markers are fitted by simply clicking them on using the WIC tool. The WIC tool can be used for all sizes and takes up to 20 markers.
WIC markers are manufactured from a halogen free material and is ROHS compliant.



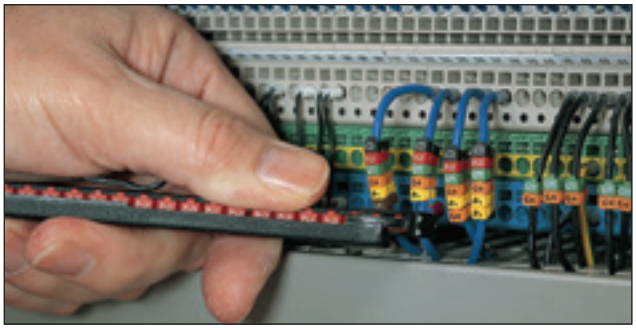
The convenient WIC dispenser ideal for pocket or toolbox storage.

Application

Applying the markers can be done either by hand or with the ergonomically designed WIC Tool.

Simply snap the marker onto the wire, twist and then reapply the next marker.

The WIC Tool is unique as it can accommodate all four sizes of WIC.



Use the applicator to simply snap the marker onto your cable.

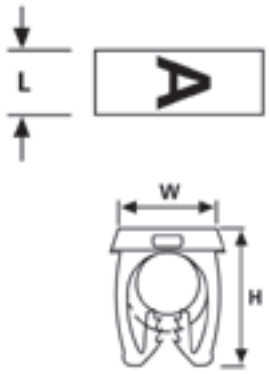


Ordering Information

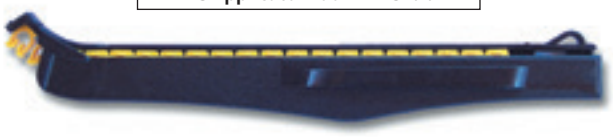
Code	Cable Dimensions		Marker Dimensions			Dispenser	
	Outside Diameter (mm)	$(mm)^2$	Width (W)	Height (H)	Length (L)	Size	Colour
WIC0	0.8 - 2.2	0.15 - 0.75	3.6	5.5	3.0	200	Green
WIC1	2.0 - 2.8	0.5 - 1.5	5.0	6.4	3.0	200	Red
WIC2	2.8 - 3.8	1.5 - 2.5	5.6	7.1	3.0	200	Blue
WIC3	4.3 - 5.3	4 - 6	8.0	9.6	3.0	100	Yellow

All dimensions in mm. Subject to technical changes.

What's new?
WIC0
New gripping allows identification on some terminal blocks



WIC Applicator Tool - WICTOOL



Material Data

Material	Polyamide 6.6 (PA66)
Colour	International resistor colour code with marking text 0-9. Yellow with marking text A-Z, 0-9 and symbols.
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V0
Certification	IEC 304, EN 60062, UL94

PU Cable Markers - Unicut

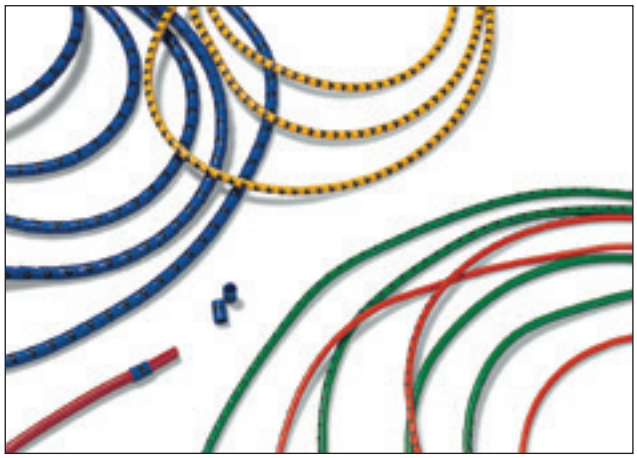
Features and Benefits

These high-grade lightweight PVC markers have a thin wall that makes them ideal for identifying wires in areas where space is at a premium. The thin wall makes the markers light, very flexible and space effective thus making installation easier. P markers are supplied fully severed whereas PU markers are supplied in semi-severed lengths.

Markers are available with A-Z characters and standard electrical symbols, in yellow material marked in black and international resistor colour coding from 0-9. (Stand packs of 1000)

Application

For close density wiring applications where the thin wall section takes up the minimum amount of space.



For areas where space and weight saving is required.

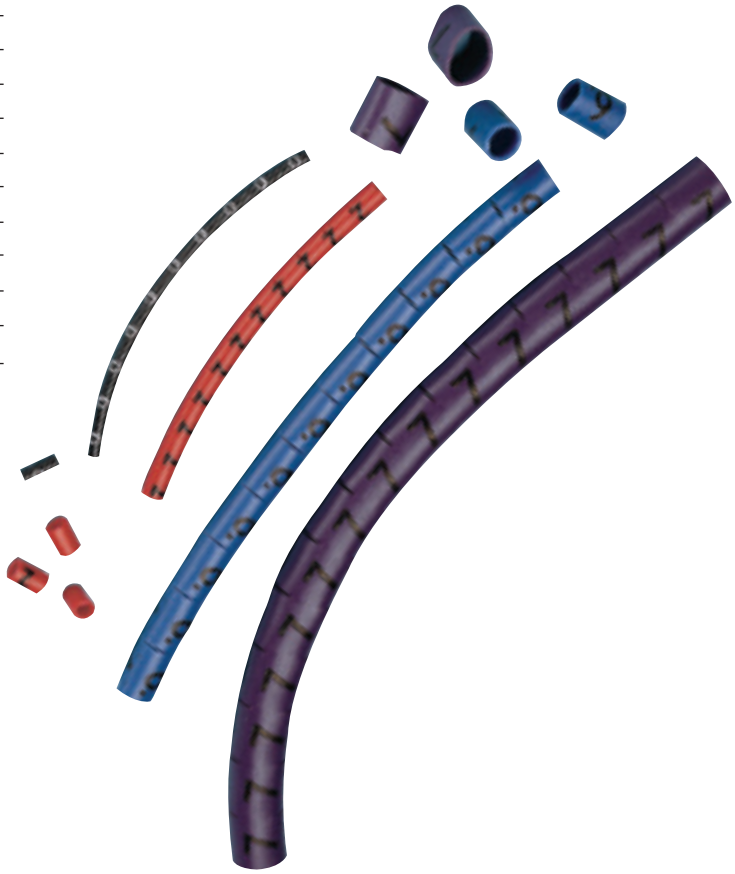
Material Data

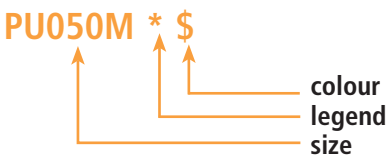
Material	Flexible Polyvinyl Chloride, cadmium free (PVC)
Colour	Yellow, international resistor colour code
Flammability	Self extinguishing
Operating Temperature	-65°C to +105°C, Intermittent +135°C
Specification	UL224, BS 3858 Type 3, IEC 684-3-101 / 104

Ordering Information

Code	Cable Dimensions OD (mm)	Wall Thickness (mm)	Tool
PU050	0,5	0,3	-
PU075	0,75	0,3	-
PU10	1,0	0,3	-
PU12	1,2	0,3	-
PU15	1,5	0,3	TJC00
PU20	2,0	0,3	TJC1-3
PU25	2,5	0,3	TJC1-3
PU30	3,0	0,3	TJC1-3
PU40	4,0	0,3	TJC2-5
PU55	5,5	0,35	

All dimensions in mm. Subject to technical changes.





Polychloroprene Markers H

Features and Benefits

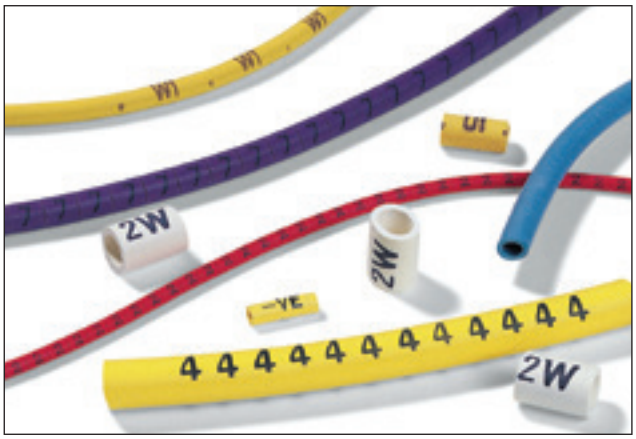
The range of Helsyn Markers is extruded from a high grade polychloroprene compound that gives excellent elasticity, and surface finish which is ideal for indelible marking. The polychloroprene markers are ideally suited for the identification of a wider range of wire and cable sizes in standard environments. The markers can be stretched 500% in fitting and 200% in continuous use. The high elasticity of the material ensures many cable diameters can be covered with one size of marker which helps toward keeping inventory costs down. Markers are available in international resistor colour coding.

Application

The polychloroprene markers (H) are ideally suited to rigorous environments such as aerospace, mass transit and defence markets.

- Extruded from a Neoprene compound.
- Ideal for binding and identification of cable harnesses.
- Custom marking.
- Various colours available.
- Good resistance to aromatic fuels, aliphatic non-polar oils, hydraulic fluids and mould growth.
- Temperature range of -65°C – 105°C.
- Fitting tools available.

Recommended
Hellerine Lubricant is strongly recommened when fitting synthetic rubber and PVC components



Highly flexible, legible and easy to apply.

Material Data

Material	Chloroprene (CR)
Colour	International resistor colour code
Flammability	UL94 HB
Operating Temperature	-65°C to +95°C, Intermittent 120°C
Specification	IEC 304, IEC 757, BS 3858 Type 1, IEC 684-3-116, BS 3858 Type 2, BS 4 G 198 Part 1 Type 1, DEF STAN 59-15 D2

Ordering Information

Code	Internal Diameter (mm)	Maximum OD of Cable (mm)	Wall Thickness (mm)	Standard Length (m)
H12	1,2	2,4	0,7	100
H15	1,5	3,0	0,8	100
H20	2,0	4,0	0,8	100
H30	3,0	6,0	0,8	100
H50	5,0	10,0	1,05	100
H75	7,5	15,0	1,25	100
H100	10,0	20,0	1,5	1,75
H150	15,0	30,0	1,7	1,75
H200	20,0	40,0	2,0	1,75

All dimensions in mm. Subject to technical changes.

Universal Sleeve Fitting Tool (D/G Kits)

- Helsyn sleeve fitting tool.
- Interchangeable prongs.

Ordering Information

Tool	
Code	**Description**
D-kit	Complete Tool - 1,2 to 11,5mm.
NA8/10	Complete Tool - 10,0 to 25,0mm.

Spare Prongs			
Code Prong.	**Sleeve Size**	**Maximum Sleeve Length (mm)**	**Maximum Tool Expansion**
SS	H12 - H20	20	15
S	H30	20	15
K	H50 - H100	32	17



Helsyn Neoprene Rubber Tubing H

Features and Benefits

The high elasticity of the material ensures many cable diameters can be covered with one size of sleeve.

Can withstand up to 120°C intermittent temperature.

Application

The polychloroprene tubings (H) are ideally suited to rigorous environments such as aerospace, mass transit and defence markets.

As the material is highly elastic, it's original size can be expanded 500% on application and 200% in continuous use.

Sleeves are available in international resistor colour code and pink.



H rubber tubing is highly flexible and easy to apply.

Technical Table

Code	Colour	Supplied Ø D	Wall (WT)
H12 tubing	Black (BK)	1.2	0.7
H15 tubing	Black (BK)	1.5	0.8
H20 tubing	Black (BK)	2.0	0.8
H30 tubing	Black (BK)	3.0	0.8
H50 tubing	Black (BK)	5.0	1.0
H75 tubing	Black (BK)	7.5	1.3
H100 tubing	Black (BK)	10.0	1.5
H150 tubing	Black (BK)	15.0	1.7

All dimensions in mm. Subject to technical changes.

Available in the following Colours : Blue, Green/Yellow, Brown, Grey



Material Data

RoHS

Material	Neoprene
Operating Temperature	-65°C to +95°C, Intermittent 120°C
Flammability	UL94 HB
Specification	BS 3858 Type 1, IEC 684-3-116, BS 4 G 198 Part 1 Type 1, DEF STAN 59-15 D2

Hellerine Lubricant (HEL200)

Hellerine is an effective aid for installation of elastomer sleeves. It slowly evaporates after installation so that sleeves can still be manipulated if necessary. Hellerine is ideal for lubricating most rubber and plastic markers and sleeves. Hellerine is available in a 200ml container.

- For use with sleeve fitting tools.
- Guaranteed to be completely fungistic.



Hellerine lubricant in 200 ml plastic bottle.

Technical Table

Code	Description
HEL200	Hellerine, 200 ml

Subject to technical changes.

DEF STAN

Please Note for Product Specific Approvals please refer to Chapter 7.0

Brother P-touch E100



Features

- Complete with durable carry case
- AC Adaptor included
- ABC with numeric keypad
- Tape widths – 6/9/12mm
- 20 mm/sec print speed
- 168 Built-in symbols
- Cable wrap, cable flag labelling functions
- 2x8m TZe laminated tape included (12mm)

Ordering Information

Code	Description
PT-E100	Brother P-touch PT-E100 electronic labeller

Brother P-touch D200



Features

- 20mm/sec Print Speed
- 14 Fonts (8 Alpha, 6 Numeric)
- 617 Symbols
- 99 Frames
- Uses 6/9/12mm Tapes
- Uses X6 AAA Alkaline Batteries (Not Included)
- Auto Design & Deco Mode Functions
- Easy to view LCD Screen

Ordering Information

Code	Description
PTD200	Brother P-touch PT-D200 Home and Office labeller

Brother P-touch 9600



Features

- 10 Font styles
- 20 Characters x 3 lines with backlight
- PC Compatible
- Barcode function
- QWERTY Keyboard
- Tape widths – 6/9/12/18/24/36mm
- Up to 360dpi print resolution
- 20mm/sec Print Speed

Ordering Information

Code	Description
PT9600	Brother P-touch PT-9600 PC-Connectable labeller

Brother P-touch E300





Features

- Complete with durable carry case
- AC Adaptor included
- Advanced serialisation features
- PC style keyboard
- 20mm/sec print speed
- Cable wrap, cable flag, face plate, patch panel & heat shrink tubing labelling functions
- Tape widths – 6/9/12/18mm
- 2x8m TZe laminated tape included (18mm)

Ordering Information

Code	Description
PTE300	Brother P-touch PT-E300 Industial handheld labeller

Brother P-touch PT7600VP





Features

- Complete with durable carry case
- AC Adaptor included
- ABC with numeric keypad
- 20mm/sec print speed
- 168 Built-in symbols
- DB Board, flag, cable wrap & USB download labelling functions
- Tape widths – 6/9/12/18/24mm
- 2x8m TZe laminated tape included (12 & 24mm)

Ordering Information

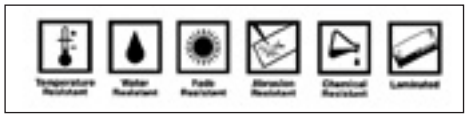
Code	Description
PT7600	Brother P-touch PT-7600 Industial handheld labeller

HellermannTyton TZ Compatible Tapes

Technical Table

Code	Tape Width	Tape Length	Colour
HTZ121	9 mm	8 m	Black/CL
HTZ131	12 mm	8 m	Black/CL
HTZ231	12 mm	8 m	Black/White
HTZ233	12 mm	8 m	Black/White
HTZ251	24 mm	8 m	Black/White
HTZ621	9 mm	8 m	Black/Yellow
HTZ631	12 mm	8 m	Black/Yellow
HTZ641	28 mm	8 m	Black/Yellow

Heat shrink tube, strong adhesive tape & flexi tape available on request.
Other tapes and colours available upon request.



Material specifications available on request.



Dymo LabelManager 160



Features

- 8 Print styles
- 2 Print lines
- 6 Print sizes
- QWERTY keyboard
- 228 symbols and clip-art images
- Tape widths – 6/9/12mm (Standard D1 labels)
- 12mm/sec print speed
- 180dpi Print resolution

Ordering Information

Code	Description
DYMO160	Dymo LabelManager 160

Dymo Rhino M1011



Features

- Uses 12mm stainless steel and aluminum labels
- Built-in hole punch
- Built-in cable tie slot punch
- Easy-to-use cutting handle
- Deep emboss ensures excellent character legibility
- Rugged cast aluminum frame

Ordering Information

Code	Description	Dimensions (W x L)
DYMOM11	Dymo Industrial Metal Tape Embosser	
DYTM11AA	Aluminium Tape - Adhesive	12mm x 3.6m
DYTM11AL	Aluminium Tape	12mm x 4.8m
DYTM11SS	Stainless Steel Tape	12mm x 6.4m

Dymo Rhino Industrial 4200



Features

- 5 Print styles
- 5 Print lines
- 7 Print sizes
- QWERTY keyboard
- Pre-programmed library with 150 symbols
- Tape widths – 6/9/12/19mm (IND Rhino labels)
- 15mm/sec print speed
- 180dpi Print resolution
- Print directly onto IND Heat-Shrink Tube

Ordering Information

Code	Description
DYMO4200	Dymo Rhino Industrial 4200

Dymo Rhino Industrial 6000



Features

- 5 Print styles
- 5 Print lines
- 7 Print sizes
- ABC keyboard
- Pre-programmed library with 250+ symbols
- Tape widths – 6/9/12/19/24mm (IND Rhino labels)
- 10 mm/sec print speed
- 180dpi Print resolution
- Print directly onto IND heat-shrink tube
- Rechargeable battery pack
- Connect to PC via USB
- Create downloadable labels on your PC using Rhino Connect Software

Ordering Information

Code	Description
DYMO6000KIT	Dymo Rhino Industrial 6000 Kit

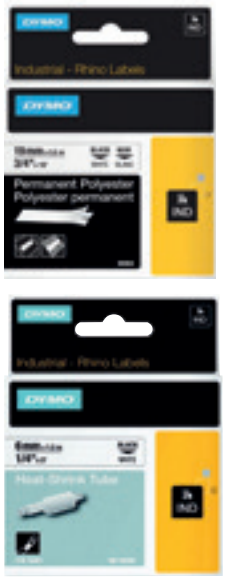


Dymo Printer Tapes

Technical Table

Code	Tape Width	Tape Length	Material	Colour
DYT12BKWT	12 mm	7.0 m	Laminated	Black/White
DYT12FNBKWT	12 mm	3.5 m	Nylon	Black/White
DYT19FNBKWT	19 mm	3.5 m	Nylon	Black/White
DYT12PPBKWT	12 mm	3.5 m	Polyester	Black/White
DYT19PPBKWT	19 mm	3.5 m	Polyester	Black/White
DYT12VBKWT	12 mm	5.5 m	Vinyl	Black/White
DYT19VBKWT	19 mm	3.5 m	Vinyl	Black/White
*DYT6HSBKYL	6 mm	1.5 m	Heat Shrink	Black/Yellow
*DYT9HSBKYL	9 mm	1.5 m	Heat Shrink	Black/Yellow
*DYT12HSBKYL	12 mm	1.5 m	Heat Shrink	Black/Yellow
*DYT19HSBKYL	19 mm	1.5 m	Heat Shrink	Black/Yellow





* On heat shrink tapes 3:1 shrink ratio / Only compatible with Rhino labelling tools

Other tape colours and sizes available upon request.

D1 Labels feature:

Easy-Peel Backing | UV Revistant | Water Resistant | Cold/Heat Resistant

Material specifications available on request.

Industrial Labels feature:

Easy-Peel Backing | UV Revistant | Water Resistant | Cold/Heat Resistant | Oil Resistant | Chemical Resistant

Helafix Carriers HC and HCR

Features and Benefits

The versatile Helafix HC and HCR character carriers are suitable for temporary or permanent marking. They are fixed in place using series T18 cable ties, screws or rivets. They are also easy to attach for temporary marking.

Material and profile reliably protect the inserted label against damp, dirt, damage and UV radiation.

Helafix HC is supplied as cut lengths in bags, pre-cut and pre-punched. Helafix HCR is supplied in reel format and can be cut to size with the appropriate HCT tools.

We recommend HFX labels printed on an office laser printer using our Tagprint Pro labelling software.

Application

Marking of cable looms, cables, pipes, transport systems, valves, sensors, for inventory marking on machines or other parts.



Multi-purpose identification potential: Helafix HC and HCR.

Material Data

RoHS

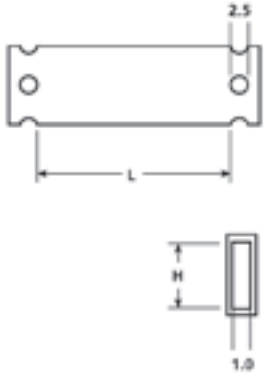
Material	Polyethelene, UV Resistant (PEUV)
Colour	Transparent (CL)
Chem. Material Properties	Excellent resistance to UV light, oils, Water and a variety of solvents.
Operating Temperature	-60°C to +65°C
Flammability	UL94 HB

HF (halogenfree)

Technical Table

Code	Length (L)	Height (H)	Recommended Labels	Quantity	Reel Length	Application Tool
Helafix HC						
HC06	17.5	7.0	–	50	–	–
HC06	35.0	7.0	–	50	–	–
HC09	17.5	10.0	HFX9-17P	50	–	–
HC09	35.0	10.0	HFX9-35P	50	–	–
HC09	52.0	10.0	HFX9-52P	50	–	–
HC12	17.5	13.0	–	50	–	–
HC12	35.0	13.0	HFX12-35P	50	–	–
HC12	52.0	13.0	HFX12-52P	50	–	–
HC12	70.0	13.0	–	50	–	–
HC18	35.0	19.0	–	50	–	–
HC18	52.0	19.0	–	50	–	–
HC18	70.0	19.0	–	50	–	–
HC24	52.0	25.0	–	50	–	–
HC24	70.0	25.0	–	50	–	–
Helafix HCR						
HCR06	–	7.0	–	–	25 m	–
HCR09	–	10.0	HFX9	–	25 m	HCT1
HCR12	–	13.0	HFX12	–	25 m	HCT2
HCR18	–	19.0	–	–	25 m	–
HCR24	–	25.0	–	–	25 m	–

All dimensions in mm. Subject to technical changes.



HFX Helafix Labels

Features and Benefits

The HFX labels have been specially developed for application with the Helafix carrier strip. They are supplied in the DIN A4 format and can be printed with a laser printer or marked manually using the T82S series of indelible marker pens. Every sheet of HFXP labels is supplied in two colours (front yellow, reverse page white). Further colours are available on request.

For problem-free printing, we recommend the software Tagprint PRO.



A precise match for Helafix, for permanent identification coding.

Material	Polyester
Chem. Material Properties	Excellent resistance to alcohol, gasoline, cleaning solvents, butanol, ethyl and butylcellosolve solvent, battery acid. UV light resistant and suitable for outdoor usage when marked with marking pen T82S or printed with laser printer.
Colour	Yellow (YE), White (WH)
Operating Temperature	-70°C to +160°C

RoHS

HF (halogenfree)

Technical Table

Code	Width (W)	Height (H)	Labels per sheet	Sheets per Pack	Carton Quality
HFX-P					
HFX9-17P	17.5	9.0	319	20	6380
HFX9-35P	35.0	9.0	145	20	2900
HFX12-35P	35.0	12.0	110	20	2200
HFX9-52P	52.5	9.0	124	20	2480
HFX12-52P	52.5	12.0	92	20	1840
HFX12-105P	105.0	12.0	44	20	880
HFX24-105P	105.0	24.0	22	20	440
HFX48-105P	105.0	48.0	10	20	200
HFX12-210P	210.0	12.0	22	20	440
HFX24-210P	210.0	24.0	11	20	220
HFX48-210P	210.0	48.0	5	20	100

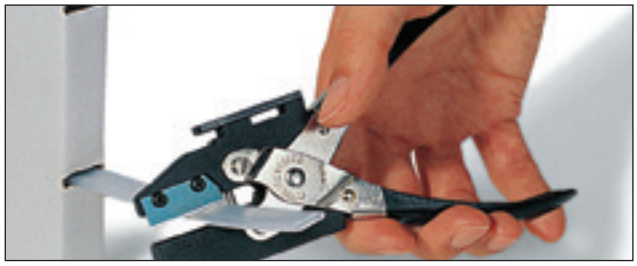
All Dimensions in mm. Subject to technical changes.

Helafix HCT Tool and Accessories

HCT1 and HCT2 tools are ideal for cleanly cutting Helafix HCR carrier strips as well as punching out the securing holes.

The punching device is designed for HCR09 and HCR12 types of character carriers.

For Helafix HCR06, HCR18 and HCR24 character carrier types, individual holes can be punched with both tools. Both tools punch holes with a diameter of 2.5mm. To fix the carrier holders simply use the T18 range of cable ties, fixings or rivets.



Any length can be used...



...just cut to suit.

Technical Table

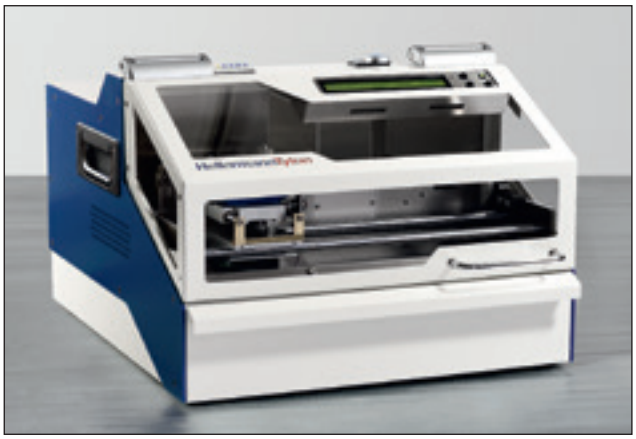
Code	For Carrier Width	For Size	Ø D
HCT1	10.0	HCR09	2.5
HCT2	13.0	HCR12	2.5

All dimensions in mm. Subject to technical changes.

Stainless Steel Printing System

M-BOSS Compact

M-BOSS Compact is a quiet easy-to-use metal plate embossing printer with a small production footprint. It is simple to install and operate and only needs a standard electrical supply and a PC. Marker plates are attached to pipes and cables using use 4.6mm width MBT cable ties and a MK9SST hand tool.



A quiet, durable, and easy to use metal plate embossing printer.

Features and Benefits

- Small and easy to use metal plate embosser
- Quiet embossing mechanism suited to production and office environments
- Emboss first marker within a minute of power up
- Cooling systems allows 8-10 hours continuous printing
- Use Tagprint Pro 3.0 labelling software with pre-loaded templates to simplify print jobs
- Organiser is available to manage printed output (UNS: 544-21000), increases printer weight to 45 kg

Technical Data

Print Method	Embossed
Power Supply	110 Volt AC- 240 Volt AC 50/60 Hz
Cycle Time	1 second per character
Printer Interfaces	USB 2.0
System Requirements	MS Windows XP, W7
Dimensions WxHxD	480mm x 360mm x 570mm
Weight	41kg
Specification	CE

Durability?

1.5 million strikes per character without maintenance

Ordering Information

Code	Description
544-20000	M-Boss Compact Embossing Machine
544-21000	M-Boss Compact and Organiser

M-BOSS Compact Markers

M-BOSS Markers are used in all areas where severe mechanical or chemical conditions occur e.g. offshore industry, marine engineering, petrochemical industry, mining, underground or on radio and cellular masts where mark permanence is critical.



A range of metal plate sizes to suit your needs.

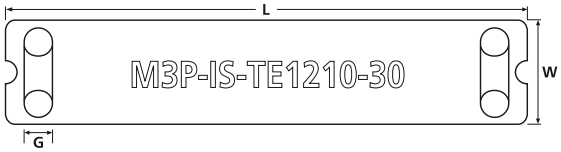
Features and Benefits

- Raised marking ensure text visibility even when covered in dust, debris, grease and oil
- Stainless steel grade S316 is suited for use in harsh environments
- Marker plates are designed for use with stainless steel cable ties with a 4.6 m strap width

Material Data

Material	Stainless Steel (SS316)
Operating Temp	-80 °C to +538 °C

HF (halogenfree) LFH (Limited Fire Hazard)



Technical Table

Code	Description	Securing Strap Width max. (G)	Number of Lines	Characters per line	Width (W)	Length (L)	Quantity Per Box
544-80101	Stainless Steel Marker 10x45	4.6	1	8	10.0	45.0	1,000
544-80102	Stainless Steel Marker 10x90	4.6	1	23	10.0	90.0	500
544-80201	Stainless Steel Marker 20x45	4.6	3	8	20.0	45.0	1,000
544-80202	Stainless Steel Marker 20x90	4.6	3	23	20.0	90.0	500

All dimensions in mm. Subject to technical changes.

Thermal Transfer Printer

TrakMark DS, Double Sided

Features and Benefits

- High volume two sided printing
- Print on TLFX DS and TULT DS (Ladder Products)
- Print on TLFX, TULT, and TCGT (Continuous tubing)
- Print on Tiptags
- Print on adhesive lLabels
- Uses standard 300 m ribbons
- Barcodes: standard and 2D
- Print speed up to 125mm/s (30mm/s recommended for Ladder Products and Tubing)
- Multiple language selection
- Windows drivers: 32 / 64 bit for Windows XP, Windows Vista, Windows 7, and Windows 8
- Options: External Reel Holder (556-00451), Cutter (556-04025), Perforator (556-04024)

Ordering Information

Code	Description
556-05000	TrakMark DS 300DPI



TrakMark DS printer.

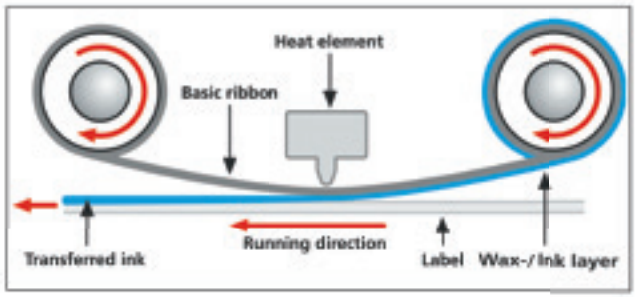
Technical Data

RoHS

Print Method	Thermal Transfer
Print Head Type	300dpi, flat type
Print Speed	30, 40, 50, 75, 100, 125mm/s
Max. Print Width	105.6mm
Max. Label Length	2.000mm
Printer Interfaces	RS232 C, USB 2.0, Ethernet 10/100 Base T
Barcodes, Printer	Standard, 2D
Printer Memory	64MB RAM
Dimensions LxHxW	554mm x 395mm x 248mm
Weight	31kg
Specification	CE, FCC, UL

Interesting facts about thermal transfer printing

M-Heated dots strike a special colour ribbon, the thermal transfer film, which transfers liquefied colour ink at exactly that point onto the backing material (labels, tubes, rating plates). Thin film technology produces faster print speeds, better and more precise images than with the 'thick film technology' formerly used.



Thin film technology.

Features and Benefits

- High print quality with a resolution of 8-12 dots/mm (12 dots/mm corresponds to approx. 300dpi)
- Barcode printing in excellent quality, hence good optical readability
- High print speeds of between 30mm/sec and 150mm/sec
- Individual graphics capability
- Problem-free and rapid realisation of self designed drafts
- Quiet and service friendly printers
- Prints are UV fast and permanent with high definition and contrast and good resistance to mechanical and chemical influences.

CE FCC UL

Please note! Not all products listed on this page may have this approval.
For product specific approvals please refer to the Appendix.

Thermal Transfer Printer

TT4000+

Features and Benefits

- High volume single sided printing
- Print on TLFX DS and TULT DS (Ladder Products)
- Print on TLFX, TULT, and TCGT (Continuous tubing)
- Print on Tiptags
- Print on adhesive labels
- Uses standard 300m ribbons
- Barcodes: standard and 2D
- Print speed up to 125mm/s (30 mm/s recommended for Ladder Products and Tubing)
- Multiple language selection
- Windows drivers: 32 / 64 bit for Windows XP, Windows Vista, Windows 7, and Windows 8
- Options: External Reel Holder (556-00451), Cutter (556-04025),Perforator (556-04024)

Ordering Information

Code	Description
556-04000	TT4000+ 300DPI



TT4000+ Series printer.

Technical Data

RoHS

Print Method	Thermal Transfer
Print Head Type	300dpi, flat type
Print Speed	30, 40, 50, 75, 100, 125mm/s
Max. Print Width	105.6mm
Max. Label Length	1.000mm
Printer Interfaces	RS232 C, USB 2.0, Ethernet 10/100 Base T
Barcodes, Printer	Standard, 2D
Printer Memory	64MB RAM
Dimensions LxHxW	446 mm x 274 mm x 242 mm
Weight	10kg
Specification	CE, FCC, UL

Thermal Transfer Printer Accessories

S4000 Cutter

Features and Benefits

- To cut printed tubing and continuous label material at a desired length
- The cutter automatically initialises each time the printer is powered on
- The cutter tray ensures the cut pieces are collected in one place
- The plug and play cutter is simply attached with one allen head screw

Ordering Information

Code	Description
556-03011	Cutter Tray for S4000
556-04025	S4000 Cutter

RoHS



Cutter S4000 for both TT4000+ and TrakMark DS.

CE FCC UL

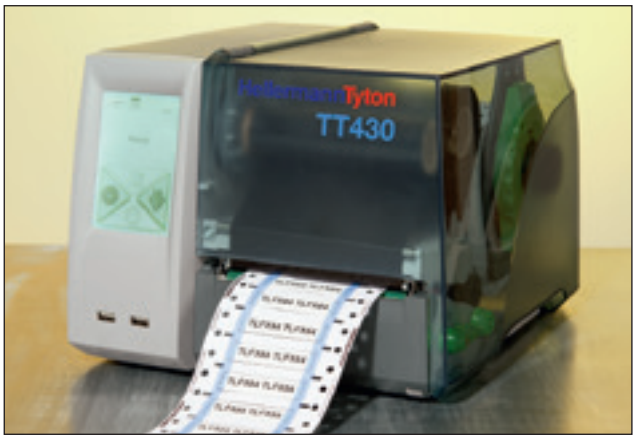
Please note! Not all products listed on this page may have this approval.
For product specific approvals please refer to the Appendix.

Thermal Transfer Printer

TT430

Features and Benefits

- Medium volume single sided printing
- Print on TLFX DS and TULT DS (Ladder Products)
- Print on TLFX, TULT and TCGT (Continuous tubing)
- Print on Tiptags
- Print on Adhesive Labels
- Uses standard ribbons
- Barcodes: standard and 2D
- Print speed up to 125mm/s (30mm/s recommended for Ladder Products and Tubing)
- Adjustable label sensor
- Multiple language selection
- Windows drivers: 32/64 bit for Windows XP, Windows Vista,Windows 7, and Windows 8
- Options: Cutter (556-00452) and External Reel Holder (556-00451)



TT430 Thermal transfer printer.

Technical Data

Print Method	Thermal Transfer
Print Head Type	300dpi, flat type
Print Speed	Up to 125mm/s
Max. Print Width	106mm
Max. Label Length	1.000mm
Printer Interfaces	USB 2.0, Ethernet 10/100 Base T
Barcodes, Printer	Standard, 2D
Printer Memory	64MB RAM
Dimensions LxHxW	322mm x 187,5mm x 253mm
Weight	4kg
Specification	CE, FCC, UL

Ordering Information

Code	Description
556-00450	TT430

Thermal Transfer Printer Accessories

P4000 Perforator

Features and Benefits

- To perforate printed tubing and continuous label material at a desired length
- Perforation depth can be adjusted to different thicknesses of the material
- Very useful accessory if tubings are printed with serial numbers
- Plug and play perforator is simply attached with one allen head screw



Perforator P4000 for both TT4000+ and TrakMark DS.

Ordering Information

Code	Description
556-04024	P4000 Perforator

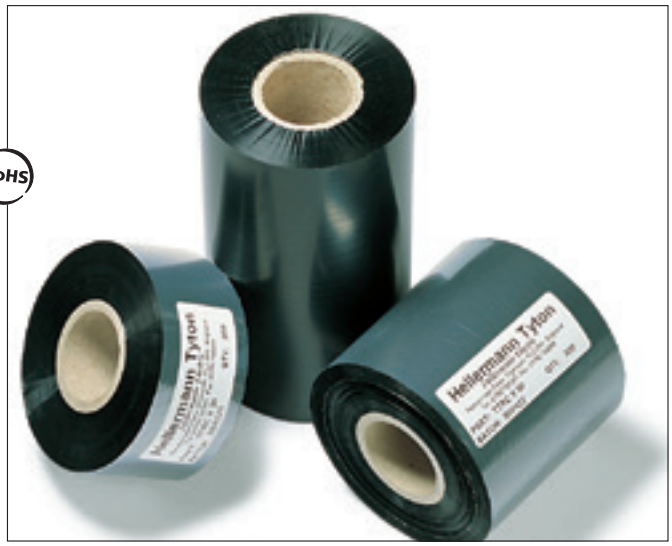
Please note! Not all products listed on this page may have this approval.
For product specific approvals please refer to the Appendix.

Thermal Transfer Ribbons for Heatshrink and TIPTAGs

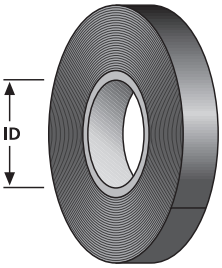
The thermal transfer print technology is based on heating up certain dots in the print head. This transfers the ink very precisely from the ribbon onto the surface of the printed material.

Recommended ribbons for printing on shrinking sleeve

The range of ribbons has been designed to give maximum print clarity and performance. Material can be handled immediately after printing, enabling the printed tubing to be immediately applied without a secondary mark stabilising operation.



Ribbons - TTRA, TTRC+.



ID: The standard inside core diameter is 25.4mm. Other sizes are available on request.

Ribbons for printing on heat shrink tubing

Ordering Information

Code	Type	Recommended Material	Colour	Width (W)	Length (L)
556-00114	**TTRC+ 30mm ****	TIPTAG/TIPTAG PU/TULT/TCGT/TLFX	White (WH)	30.0	300 m
556-00115	**TTRC+ 60mm ****	TIPTAG/TIPTAG PU/TULT/TCGT/TLFX	Black (BK)	60.0	300 m
556-00103	**TTRC+ 100mm ****	TIPTAG/TIPTAG PU/TULT/TCGT/TLFX	Black (BK)	100.0	300 m
556-00139	**TTDTHOUT 40mm**	TIPTAG/TULT/TCGT/TLFX/TULT DS/ TLFX	Black (BK)	40.0	300 m
556-00140	**TTDTHOUT 60mm**	TIPTAG/TULT/TCGT/TLFX/TULT DS/ TLFX	Black (BK)	60.0	300 m
556-00141	**TTDTHOUT 100mm**	TIPTAG/TULT/TCGT/TLFX/TULT DS/ TLFX	Black (BK)	100.0	300 m
556-00161	**TT822OUT8 110mm**	TULT/TCGT	Silver Grey (SRGY)	110.0	300 m
556-00125	**TTRW 30mm**	TULT/TCGT	White (WH)	30.0	300 m
556-00137	**TTRW 60mm**	TULT/TCGT	White (WH)	60.0	300 m
556-00133	**TTRW 100mm**	TULT/TCGT	White (WH)	100.0	300 m

All dimensions in mm. Subject to technical changes.
** Patent GB98074362
Ribbon for adhesive labels available in varies sizes on request

Meets printer performance requirements of SAE-AS81531 using the ribbons in any thermal transfer printer, including HellermannTyton's TT4000+ and TT430

Selection Guide

	Resistance to								Markets (suggested)							
Material (Page)	Smudgeproof	Scratchproof	Partly Smudgeproof	Oils / Benzenes	Alcoholic solvents	Etching	Approved	TT Ribbon	Aerospace	Automotive	Machine Building	Military	Process Control	Rail	Mining	
TIPTAG HF	■	■	-	■	■	-	-	TTDTHOUT	-	-	■	-	-	■	■	
(1/27)	■	■	-	■	■	■	-	TTRC+	-	-	■	-	-	■	■	
TIPTAGs	■	■	-	■	■	-	-	TTDTHOUT	-	-	■	■	■	■	■	
(1/28)	■	■	-	■	■	■	-	TTRC+	-	-	■	■	■	■	■	
TCGT	-	-	■	-	-	-	-	TT822OUT8	■	-	■	■	■	-	-	
(1/26)	■	■	-	■	■	-	-	TTDTHOUT	■	■	■	■	■	-	-	
	■	■	-	■	■	■	-	TTRC+	■	-	■	■	■	■	■	
	-	-	■	-	-	-	-	TTRW	■	-	■	■	■	-	-	
TULT DS	-	-	■	-	-	-	-	TT822OUT8	■	-	■	■	■	-	-	
(1/25)	■	■	-	■	■	-	-	TTDTHOUT	■	■	■	■	■	-	-	
	■	■	-	■	■	■	-	TTRC+	■	-	■	■	■	■	■	
	-	-	■	-	-	-	-	TTRW	■	-	■	■	■	-	-	
TLFX DS	■	■	-	■	■	-	■	TTDTHOUT	■	■	■	■	■	■	■	
(1/24)	■	■	-	■	■	■	-	TTRC+	■	-	■	■	■	■	■	
	■	■	-	■	■	■	-	TTRHT	■	-	■	■	■	■	■	
TDRT DS	■	■	-	■	■	-	■	TTDTHOUT	■	■	■	■	■	■	■	
(1/23)	■	■	-	■	■	■	-	TTRC+	■	-	■	■	■	■	■	
	■	■	-	■	■	■	-	TTRHT	■	-	■	■	■	■	■	
SGP	-	-	■	-	-	-	-	TT822OUT8	■	-	■	■	■	-	-	
(3/13)	■	■	-	■	■	-	-	TTDTHOUT	■	■	■	■	■	-	-	
	■	■	-	■	■	■	-	TTRC+	■	-	■	■	■	-	-	
	-	-	■	-	-	-	-	TTRW	■	-	■	■	■	-	-	
HFT	-	-	■	-	-	-	-	TT822OUT8	■	-	■	■	■	-	-	
(3/14)	■	■	-	■	■	-	-	TTDTHOUT	■	■	■	■	■	-	-	
	■	■	-	■	■	■	-	TTRC+	■	-	■	■	■	■	■	
	-	-	■	-	-	-	-	TTRW	■	-	■	■	■	-	-	

Other specialised materials available on request

■ Yes
- No

Labelling Software

TagPrint Pro

TagPrint Pro label creation and printing software is powerful, multi-functional and extremely easy to use. Used to provide solutions for industrial identification, TagPrint Pro speeds production and offers many options for a wide variety of labelling requirements. 'What You See Is What You Get' (WYSIWYG) label creation, bar coding, serialisation, label sets, wire lists, graphics and text choices are just some capabilities of TagPrint Pro software. TagPrint Pro can be utilised with HellermannTyton's wide array of label options including laser, ink jet, dot matrix and thermal transfer printable labels.



Product Selection

Code	Package Quantity
TAGPRINTPRO Version 3.0 (Full)	1
TAGPRINTPRO Version 3.0 (Upgrade)	1

* Existing owners of previous versions of TagPrint can qualify for an upgrade at a reduced cost with proof of purchase and a valid serial number. Contact HellermannTyton for details. Use **Part No.** for ordering and **Type** for specification purposes.

Features and Benefits

- Alphanumeric sequences
- Print to multiple printers at one time
- Save jobs in a queue and print all at one time with 'Print later' function
- Print faster
- Connect or import directly from other databases including Excel, Access, text files
- More barcode types
- Inverse, flip, and mirror image options for graphic images
- Multilingual
- Print log available
- Manually adjust font size to 1/10 of a point
- Customise height and width of characters
- Customise line spacing

System Requirements	PC running Microsoft Windows XP SP3, Vista SP1 or later, Windows 7 .NET Framework 4, Windows 8 512 MB RAM (XP SP3) 1.0 GB RAM (Vista/Windows 7/Windows 8) 500 MB available hard disk space



We print for you!



Thermal Transfer Printer
TrakMark DS, Double Sided

High volume printing on various label types.

Thermal Transfer Printer
TT4000+

High volume single sided printing.

Stainless Steel Printing System
M-BOSS Compact

Small and easy to use steel plate embosser.

Heat-shrinkable wire identification, thermal transfer
TULT DS - 3:1 "Ladder Style" Sleeves

Excellent mechanical strength and resistance to organic solvents and chemicals.

Stainless Steel Printing System
M-BOSS Compact Markers

Improved text visibility in harsh conditions.

Complete Print Shop

for all your Identification solutions

We'll print it for you! Introducing the HellermannTyton Print Shop, the one-stop solution for all your identification needs. Whether you require one embossed plate or a thousand labels, our state-of-the-art facility is equipped to provide the best.

HellermannTyton industrial identification is purpose-developed for modern working processes. Whether it involves cable and wire labelling, asset identification or security labelling, HellermannTyton is able to offer you first class products to match your needs.

HellermannTyton offers easy solutions from highly complicated label designs for serial production to simple one-off labels in a few clicks. Our worldwide cable identification experience ensures that our materials, printers and software suit your needs, ranging from simple pre-printed markers, adhesive labels that can be written on by hand, printing systems designed to process thousands of labels to the best-in-class printer for embossing onto stainless steel plates.

Identify with us. Our experience, technical expertise, dedication and customer-centricity means that we are able to supply you with complete identification solutions.

Heat Shrinkable wire identification, thermal transfer

TDRT DS - 3:1 'Ladder Style' Sleeves

NF F 00-608 (12/1995) rail approved 3:1 heatshrink marking system supplied in a Ladder Format.



Features and Benefits

- Shrink ratio 3:1 for sizes 2.4, 3.2, 4.8, 6.4, and 9.5
- Shrink ratio 2:1 for larger sizes (Industry standard)
- 50mm and 25mm lengths are standard, other lengths available on request
- Available in yellow as standard and white on request
- Certified to NF F 00-608 (12/1995) using TTDTHOUT and TTRHT ribbon, and laser beam equipment
- Delivery in convenient storage boxes
- Easy label design with TagPrint Pro 3.0



What's new?

DIESEL RESISTANT
Approved for Rail Industry

Material Data

Material	Polyolefin, cross-linked (PO-X)
Recommended Ribbon type	TTDTHOUT, TTRHT
Shrink ratio	3:1 / 2:1
Operating Temperature	-55°C to +135°C
Shrink Temperature	+120°C
Specified to	NF F 00-608 (12/1995)

RoHS

LFH (Limited Fire Hazard)

Ordering Information

Code	Desciption	Supplied Ø D min.	Recov. Ø d max.	Length (L)	Wall Thickness (WT)	Pack Cont.	Ratio
553-70001	TDRT2.4DS-1x50YL	2.4	0.8	50mm	0.50	5000	3:1
553-70003	TDRT2.4DS-2x25YL	2.4	0.8	25mm	0.50	10000	3:1
553-70005	TDRT3.2DS-1x50YL	3.2	1.1	50mm	0.50	5000	3:1
553-70007	TDRT3.2DS-2x25YL	3.2	1.1	25mm	0.50	10000	3:1
553-70009	TDRT4.8DS-1x50YL	4.8	1.6	50mm	0.55	5000	3:1
553-70011	TDRT4.8DS-2x25YL	4.8	1.6	25mm	0.55	10000	3:1
553-70013	TDRT6.4DS-1x50YL	6.4	2.1	50mm	0.55	3000	3:1
553-70015	TDRT6.4DS-2x25YL	6.4	2.1	25mm	0.55	6000	3:1
553-70017	TDRT9.5DS-1x50YL	9.5	3.2	50mm	0.60	2500	3:1
553-70019	TDRT9.5DS-2x25YL	9.5	3.2	25mm	0.60	5000	3:1
553-70021	TDRT12DS-1x50YL	12.7	6.4	50mm	0.40	1500	2:1
553-70023	TDRT12DS-2x25YL	12.7	6.4	25mm	0.40	3000	2:1
553-70025	TDRT18DS-1x50YL	19.1	9.5	50mm	0.46	1500	2:1
553-70027	TDRT18DS-2x25YL	19.1	9.5	25mm	0.46	3000	2:1
553-70029	TDRT25DS-1x50YL	25.4	12.7	50mm	0.50	1000	2:1
553-70031	TDRT25DS-2x25YL	25.4	12.7	25mm	0.50	2000	2:1
553-70033	TDRT38DS-1x50YL	38.1	19.1	50mm	0.65	500	2:1
553-70035	TDRT38DS-2x25YL	38.1	19.1	25mm	0.65	1000	2:1
553-70037	TDRT51DS-1x50YL	50.8	25.4	50mm	0.65	500	2:1
553-70039	TDRT51DS-2x25YL	50.8	25.4	25mm	0.65	1000	2:1

3x16mm available on request
Other colours on request

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

NF F

Please note! Not all products listed on this page may have this approval.
For product specific approvals please refer to the Appendix.

Heat Shrinkable wire identification, thermal transfer

TLFX DS - 2:1 LFH 'Ladder Style' Sleeves

Rail approved 2:1 heatshrink marking system supplied in a ladder format.



Features and Benefits

- Shrink ratio 2:1
- 50mm, 25mm, and 16mm pre-cut marker options as standard, other lengths available on request
- Available in white and yellow
- Cable range 38.1mm to 1.2mm
- Halogen free
- Low smoke propagation, density and toxicity
- High oxygen index value (38%)
- Fulfills highest standard rail flammability norms
- Delivery in convenient storage boxes
- Easy label design with TagPrint Pro



Material Data

Material	Polyolefin, cross-linked (PO-X)
Recommended printing speed (mm/s)	30
Recommended Ribbon type	TTDTHOUT, TTRC+
Shrink ratio	2:1
Operating Temperature	-30°C to +105°C
Shrink Temperature	+90°C
Marker lengths	25mm, 50mm (16mm on request)
Covered wire range	38.1m > 1.2mm
Specified to	ASTM E 662, CEN TS 45545-2: 2009, BS-6853:1999, DIN 5510-2: 2009, DIN 53438-3: 1984, EN ISO 11925-2: 2010, NF F 16-101: 1988, NF X 70-100-1: 2006, NF X 70-100-2: 2006, UNI CEI 11170-3 Ed. 2005 + FA 2007

RoHS

HF (halogenfree) LFH (Limited Fire Hazard)

Ordering Information

Code	Desciption	Supplied Ø D min.	Recov. Ø d max.	Length (L)	Wall Thickness (WT)	Pack Cont.	Colour
553-60001	TLFX32DS-1x50WT	3.2	1.6	50mm	0.58	5000	White
553-60011	TLFX32DS-1x50YL	3.2	1.6	50mm	0.58	5000	Yellow
553-60002	TLFX48DS-1x50WT	4.8	2.4	50mm	0.61	5000	White
553-60012	TLFX48DS-1x50YL	4.8	2.4	50mm	0.61	5000	Yellow
553-60003	TLFX64DS-1x50WT	6.4	3.2	50mm	0.61	3000	White
553-60013	TLFX64DS-1x50YL	6.4	3.2	50mm	0.61	3000	Yellow
553-60005	TLFX127DS-1x50WT	12.7	6.4	50mm	0.68	1500	White
553-60015	TLFX127DS-1x50YL	12.7	6.4	50mm	0.68	1500	Yellow
553-60007	TLFX254DS-1x50WT	25.4	12.7	50mm	0.69	1000	White
553-60017	TLFX254DS-1x50YL	25.4	12.7	50mm	0.69	1000	Yellow
553-60008	TLFX381DS-1x50WT	38.1	19.0	50mm	0.70	500	White
553-60018	TLFX381DS-1x50YL	38.1	19.0	50mm	0.70	500	Yellow

2x25mm and 3x16mm available on request
Other colours on request

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

BS CEN DIN EN NF F UNI CEI

Please note! Not all products listed on this page may have this approval.
For product specific approvals please refer to the Appendix.

Heat Shrinkable markers “Ladder Style”, thermal transfer

TULT DS - 3:1 Military and Electronics

TULT DS is a 3:1 heatshrink material pre-cut and formatted onto a convenient “ladder” system that allows printing on both sides of the marker. The user can easily choose and pick the required marker. Print with HellermannTyton’s premium range of thermal printers and ribbons.



TULT DS.

Features and Benefits

- Shrink ratio 3:1
- 50mm, 25mm and 16mm pre-cut marker options as standard, other lengths available on request
- Available in white and yellow
- Meets MIL-STD 202G Method 215 print requirements using TTDTHOUT ribbon
- Fulfils UL224 VW-1 requirements
- Fulfils LUL C3349 requirements
- Good mechanical strength and resistance to organic solvents and chemicals
- Highly flexible
- Delivery in convenient storage boxes
- Easy label design with TagPrint Pro 3.0

Material Data

RoHS

Material	Polyolefin, cross-linked (PO-X)
Recommended Ribbon type	TTDTHOUT
Shrink ratio	3:1
Operating Temperature	-55°C to +135°C
Shrink Temperature	+90°C
Marker lengths	25mm, 50mm (16mm on request)
Covered wire range	50.8m > 0.8mm
Specified to	MIL-STD-202G Method 215K, UL-Recognized



Ordering Information

Code	Desciption	Supplied Ø D min.	Recov. Ø d max.	Length (L)	Wall Thickness (WT)	Pack Cont.	Colour
553-71006	TULT3DSx50WT	3.0	1.0	50mm	0.60	1000	White
553-71007	TULT3DSx50YL	3.0	1.0	50mm	0.60	1000	Yellow
553-71012	TULT4.8DSx50WT	4.8	1.6	50mm	0.65	1000	White
553-71013	TULT4.8DSx50YL	4.8	1.6	50mm	0.65	1000	Yellow
553-71018	TULT6DSx50WT	6.0	2.0	50mm	0.70	1000	White
553-71019	TULT6DSx50YL	6.0	2.0	50mm	0.70	1000	Yellow
553-71030	TULT12DSx50WT	12.0	4.0	50mm	0.85	500	White
553-71031	TULT12DSx50YL	12.0	4.0	50mm	0.85	500	Yellow
553-71042	TULT24DSx50WT	24.0	8.0	50mm	1.20	250	White
553-71043	TULT24DSx50YL	24.0	8.0	50mm	1.20	250	Yellow
553-71048	TULT39DSx50WT	39.0	13.0	50mm	1.25	250	White
553-71049	TULT39DSx50YL	39.0	13.0	50mm	1.25	250	Yellow

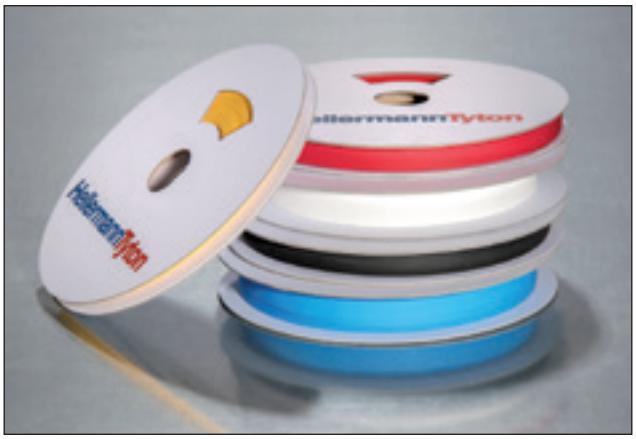
2x25mm and 3x16mm available on request
Other colours on request

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

Heat Shrinkable wire identification, thermal transfer

TCGT - 3:1 Commercial Grade Tubing

TCGT is a commercial grade 3:1 heatshrink material supplied as a continuous tube and printable on both sides. The supplied accessories allow users to either perforate the tubing at pre-determined lengths (P4000), or fully sever the markers (S4000) whilst printing with the TrakMark DS or TT4000+ printer.



TCGT – 5 colours of printable tube to cover a wide range of diameters.

Features and Benefits

- Shrink ratio 3:1
- Available in Black, Blue, Red, White, and Yellow
- Cable range from 39mm to 1mm
- Good mechanical strength and resistance to organic solvents and chemicals
- Highly flexible
- Fulfils CSA requirements
- Delivery in convenient storage boxes
- Easy label design with TagPrint Pro

Material Data

Material	Polyolefin, cross-linked (PO-X)
Recommended Ribbon type	TTRC+, TTDTHOUT, TTRW, TT822OUT8
Shrink ratio	3:1
Operating Temperature	-55°C to +135°C
Shrink Temperature	+120°C
Specified to	CSA



Ordering Information

Code	Desciption	Supplied Ø D min.	Recov. Ø d max.	Wall Thickness (WT)	Pack Cont.	Colour
553-30300	TCGT3BK	3.0	1.0	0.60	176m	Black (BK)
553-30480	TCGT4.8BK	4.8	1.6	0.65	110m	Black (BK)
553-30600	TCGT6BK	6.0	2.0	0.70	110m	Black (BK)
553-30900	TCGT9BK	9.0	3.0	0.80	72m	Black (BK)
553-31200	TCGT12BK	12.0	4.0	0.85	54m	Black (BK)
553-31800	TCGT18BK	18.0	6.0	1.00	26m	Black (BK)
553-32400	TCGT24BK	24.0	8.0	1.20	26m	Black (BK)
553-33903	TCGT39BK	39.0	13.0	1.25	10m	Black (BK)

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

Please note! Not all products listed on this page may have this approval.
For product specific approvals please refer to the Appendix.

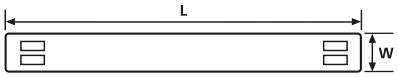
Identification tags for cable bundle, thermal transfer

TIPTAG, halogen free

Secured to bundles using Cable Ties up to T50R width maximum.

Features and Benefits

- Identification tags for use with large wire and cable bundles
- Perforated format that includes fastening slots for cable ties
- Excellent print performance using TTDTHOUT and TTRC+ ribbon
- Print with TT4000+ and TT430 for best results
- Easy label design with TagPrint Pro
- Special lengths and colours available on request





TIPTAG - High performance cable bundle marking.

Material Data

Material	Polyolefin Compound unlinked (PO)
Flammability	Limited fire hazard, low generation of toxic gases and corrosive acid, low smoke generation, Halogen free
Operating Temperature	-40°C to +90°C Continuous, (+160°C for 200 h)
Recommended Ribbon Type	TTRC+, TTDTHOUT
Specification	BS-6425, London Underground RSE STD 013

RoHS

HF (halogenfree) LFH (Limited Fire Hazard)

Ordering Information

Code	Type	Length (L)	Width (W)	Pack Cont.	Colour
556-20069	TIPTAG11X65WT	65.0	11.0	190	White (WH)
556-20064	TIPTAG11X65YL	65.0	11.0	190	Yellow (YE)
556-21069	TIPTAG15X65WT	65.0	15.0	190	White (WH)
556-21064	TIPTAG15X65YL	65.0	15.0	190	Yellow (YE)
556-20079	TIPTAG11X100WT	100.0	11.0	120	White (WH)
556-20074	TIPTAG11X100YL	100.0	11.0	120	Yellow (YE)
556-21079	TIPTAG15X100WT	100.0	15.0	120	White (WH)
556-21074	TIPTAG15X100YL	100.0	15.0	120	Yellow (YE)

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

BS Please note! Not all products listed on this page may have this approval. For product specific approvals please refer to the Appendix.

Identification tags for cable bundle, thermal transfer

Ladder Style TIPTAGs

Identification of pre-terminated cable bundles with cable tie fastening.

Features and Benefits

- Ladder format allows for non sequencial picking
- Wide sheet material design saves on ribbon use
- Perforated format that includes fastening slots for up to 3 cable ties
- Excellent print performance using TTDTHOUT and TTRC+ ribbon
- Print with TT4000+ and TT430 for best results
- Easy label design with TagPrint Pro
- Special material and sizes available on request

What's new?

LADDER STYLE TIPTAG
Easy picking and Ribbon saving



Ladder Style TIPTAG - High performance cable bundle marking.

Material Data

Material	Polyolefin Compound unlinked (PO)
Flammability	Limited Fire Hazard, Low generation of toxic gases and corrosive acid, Low smoke generation, Halogen free
Operating Temperature	-40°C to +90°C Continuous, (+160°C for 200 h)
Recommended Ribbon Type	TTRC+, TTDTHOUT
Specification	BS-6425, London Underground RSE STD 013

RoHS

HF (halogenfree) LFH (Limited Fire Hazard)

Material Options

Material	Description
TAGHT	HT is for High Temperature applications: Aerospace and Defence
TAGLF	LF is for Limited Fire Hazard (LFH) applications: Rail
TAGDR	DR is for Diesel Resistant applications: Rail
TAGUL	UL is for all areas where TULT tubing is used: Aerospace, Defence and Electrical
TAGPU	PU is for Polyurethane which is ideal for outdoor applications: Aerospace, Defence and Mass Transit industries

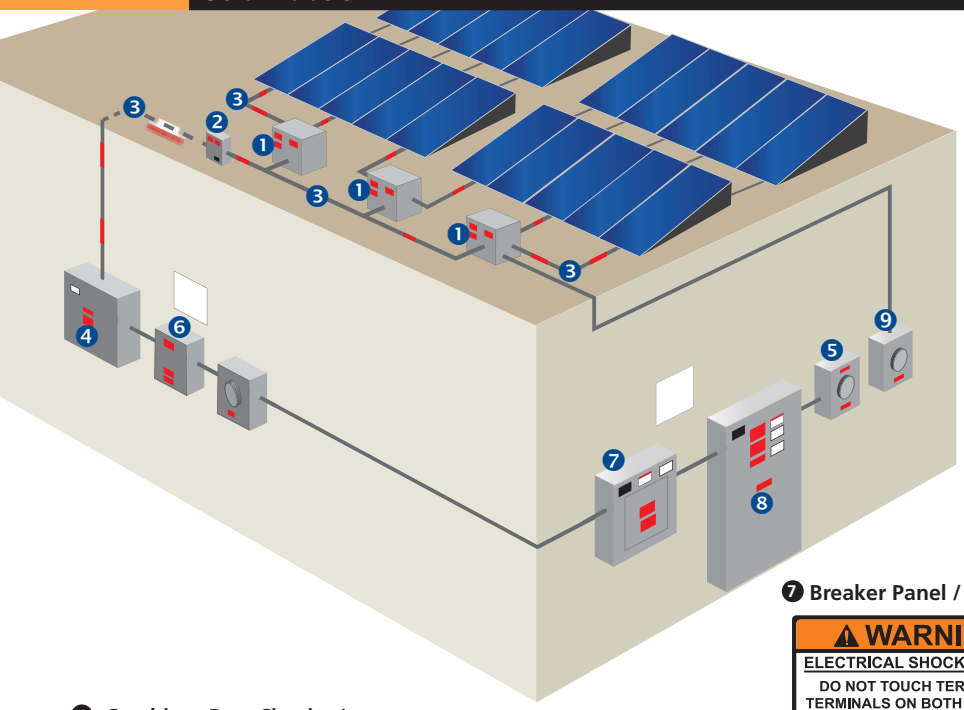
Ordering Information

Code	Type	Height x Length	Feed Holes	Pack Cont.	Colour
556-80004	TAGHT20X51-6YE	20 x 51mm	6	1000	Yellow (YE)
556-83001	TAGLF10X51-4YE	10 x 51mm	4	2000	Yellow (YE)
556-83003	TAGLF20X51-4YE	20 x 51mm	4	1000	Yellow (YE)
556-83005	TAGLF20X51-6YE	20 x 51mm	6	1000	Yellow (YE)
556-83501	TAGDR10X51-4YE	10 x 51mm	4	2000	Yellow (YE)
556-83503	TAGDR20X51-4YE	20 x 51mm	4	1000	Yellow (YE)
556-83505	TAGDR20X51-6YE	20 x 51mm	6	1000	Yellow (YE)
556-82001	TAGUL10X51-4YE	10 x 51mm	4	2000	Yellow (YE)
556-82003	TAGUL20X51-4YE	20 x 51mm	4	1000	Yellow (YE)
556-82005	TAGUL20X51-6YE	20 x 51mm	6	1000	Yellow (YE)

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

BS

Please note! Not all products listed on this page may have this approval. For product specific approvals please refer to the Appendix.



Photovoltaic System
Labelling Requirements

NEC 2014 Article 690 and IFC 2012

This diagram is an illustration of one photovoltaic labeling scenario. The number and type of labels needed will vary based on the project scope and its related specifications.

1 Combiner Box, Circuits / Conduit Combiner Box / Enclosures / EMT Enclosures

WARNING
ELECTRICAL SHOCK HAZARD
THE DC CONDUCTORS OF THIS PHOTOVOLTAIC SYSTEM ARE UNGROUNDED AND MAY BE ENERGIZED

NEC 690.35(F) | Part No. 596-00588

WARNING
ELECTRICAL SHOCK HAZARD
DO NOT TOUCH TERMINALS TERMINALS ON BOTH LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

NEC 690.17(E) | Part No. 596-00497

WARNING
TURN OFF PHOTOVOLTAIC AC DISCONNECT PRIOR TO WORKING INSIDE PANEL

NEC 110.27(C) & OSHA 1910.145(f)(7) Part No. 596-00499

2 DC Disconnect / Breaker / Recombiner Box

WARNING
ELECTRICAL SHOCK HAZARD
THE DC CONDUCTORS OF THIS PHOTOVOLTAIC SYSTEM ARE UNGROUNDED AND MAY BE ENERGIZED

NEC 690.35(F) | Part No. 596-00588

WARNING
ELECTRICAL SHOCK HAZARD
DO NOT TOUCH TERMINALS TERMINALS ON BOTH LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION
DC VOLTAGE IS ALWAYS PRESENT WHEN SOLAR MODULES ARE EXPOSED TO SUNLIGHT

NEC 690.17(E) | Part No. 596-00496

PHOTOVOLTAIC
DC DISCONNECT

IFC 605.11.3, NEC 690.15 & NEC 690.13(B) Part No. 596-00238

RATED MAX POWER-POINT CURRENT
RATED MAX POWER-POINT VOLTAGE
MAXIMUM SYSTEM VOLTAGE
MAXIMUM CIRCUIT CURRENT
MAX RATED OUTPUT CURRENT OF THE CHARGE CONTROLLER IF INSTALLED

NEC 690.53 | Part No. 596-00253

3 EMT / Conduit Raceways

(Reflective Material Required)

WARNING: PHOTOVOLTAIC POWER SOURCE

NEC 690.31(G)(3)(4) | Part No. 596-00206

4 Inverter

PHOTOVOLTAIC AC DISCONNECT
MAXIMUM AC OPERATING CURRENT:
NOMINAL OPERATING AC VOLTAGE:

NEC 690.54 | Part No. 596-00239

5 Production / Net Meter (Bi-directional)

WARNING DUAL POWER SOURCE
SECOND SOURCE IS PHOTOVOLTAIC SYSTEM

NEC 705.12(D)(3) & NEC 690.64 | Part No. 596-00495

6 AC Disconnect / Breaker / Points of Connection

PHOTOVOLTAIC
AC DISCONNECT

IFC 605.11.3, NEC.690.15, NEC 690.13(B) Part No. 596-00237

NOMINAL OPERATING AC VOLTAGE
NOMINAL OPERATING AC FREQUENCY
MAXIMUM AC POWER
MAXIMUM AC CURRENT
MAX OVERCURRENT DEVICE RATING FOR AC MODULE PROTECTION

NEC 690.52 | Part No. 596-00252

WARNING
ELECTRICAL SHOCK HAZARD
DO NOT TOUCH TERMINALS TERMINALS ON BOTH LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

NEC 690.17(E) | Part No. 596-00497

7 Breaker Panel / Pull Boxes

WARNING
ELECTRICAL SHOCK HAZARD
DO NOT TOUCH TERMINALS TERMINALS ON BOTH LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

NEC 690.17(E) | Part No. 596-00497

PHOTOVOLTAIC AC DISCONNECT
MAXIMUM AC OPERATING CURRENT:
NOMINAL OPERATING AC VOLTAGE:

NEC 690.54 | Part No. 596-00239

WARNING
ELECTRICAL SHOCK HAZARD
THE DC CONDUCTORS OF THIS PHOTOVOLTAIC SYSTEM ARE UNGROUNDED AND MAY BE ENERGIZED

NEC 690.35(F) | Part No. 596-00588

WARNING
TURN OFF PHOTOVOLTAIC AC DISCONNECT PRIOR TO WORKING INSIDE PANEL

WARNING DUAL POWER SOURCE
SECOND SOURCE IS PHOTOVOLTAIC SYSTEM

NEC 705.12(D)(3) & NEC 690.64 | Part No. 596-00495

CAUTION
PHOTOVOLTAIC SYSTEM CIRCUIT IS BACKFED

NEC 705.15(D)(3) & NEC 690.64 Part No. 596-00587

8 Main Service Disconnect

WARNING
ELECTRICAL SHOCK HAZARD
DO NOT TOUCH TERMINALS TERMINALS ON BOTH LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

NEC 690.17(E) | Part No. 596-00497

WARNING
TURN OFF PHOTOVOLTAIC AC DISCONNECT PRIOR TO WORKING INSIDE PANEL

NEC 690.5(C) | Part No. 596-00499

MAIN PHOTOVOLTAIC SYSTEM DISCONNECT

NEC 690.15 & NEC 690.13(B) | Part No. 596-00243

9 Main Service Disconnect

MAIN PHOTOVOLTAIC SYSTEM DISCONNECT

NEC 690.15 & NEC 690.13(B) | Part No. 596-00243

CODE	DESCRIPTION	PACK
59600495 (X)*	WARNING DUAL POWER SOURCE	50
59600496 (X)*	WARNING ELECTRIC SHOCK HAZARD DC VOLT	50
59600497 (X)*	WARNING ELECTRIC SHOCK HAZARD	50
59600588 (X)*	WARNING DC CONDUCTORS ENERGIZED	50
59600499 (X)*	WARNING TURN OFF PHOTOVOLTAIC	50
59600587 (X)*	CAUTION PHOTOVOLTAIC SYSTEM IS BACKFED	50
59600237 (X)*	PHOTOVOLTAIC AC DISCONNECT	50
59600238 (X)*	PHOTOVOLTAIC DC DISCONNECT	50
59600239 (X)*	PV AC DISCONNECT RATING	50
59600252 (X)*	AC MODULE RATING LABEL FROM NEC 2011	50
59600253 (X)*	DC MODULE RATING LABEL FROM NEC 2011	50
59600255 (X)*	MAIN PV SYSTEM AC DISCONNECT	50
59600246 (X)*	SOLAR DISCONNECT	50
59600206 (X)*	WARNING PHOTOVOLTAIC POWER SOURCE	50
59600615 (X)*	CAUTION SOLAR CIRCUIT	50
59600243 (X)*	MAIN PHOTOVOLTAIC SYSTEM DISCONNECT	50
59600208 (V)**	WARNING PHOTOVOLTAIC POWER SOURCE 7.25X5	25

* Available in packs of 10 ** Available in pack of 5

HellermannTyton offers the most comprehensive and innovative line of identification products for the renewable energy industry. In order to meet the needs of our customers, HellermannTyton has developed a variety of flexible labelling and printing solutions.

Flexibility to label and print the way you want, when you want.



Renewable Energy Labels

HellermannTyton provides you with all the label options you need for code compliant photovoltaic labelling. Choose from a complete line of pre-printed NEC 2014 and NEC 2011 labels. For voltage and current labelling, we offer variable print label options with a partially printed template.

Reflective Renewable Energy Labels

Reflective Renewable Energy Labels are designed to be easy to see by first responders who are looking to identify and isolate the PV system. Reflective labels can be seen through smoke and in darkness using reflected light. HellermannTyton pre-printed Reflective Renewable Energy Labels meet fire safety and NEC regulations.



596-00206



596-00255



596-00246



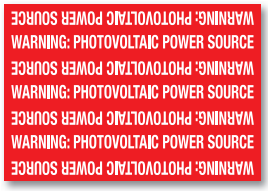
596-00615

Material Data

Material	242/552 UV Stable Reflective Vinyl w/ Acrylic Laminate
Operating Temperature	-40 °F (-40 °C) to 175 °F (79 °C)
Min. Application Temp.	50 °F (10 °C)
Liner	Polyethylene coated paper
Certifications	UL969

Reflective Renewable Energy Circuit Markers

These photovoltaic caution and power source markers are pre-printed, non-adhesive, coiled markers that can be opened and snapped over cables for long-term, reflective, permanent identification. Made of a UV stable vinyl, the coiled markers come 25 per bag and will fit on all standard PV cables or electrical metallic tubing (EMT) conduits.



596-00208

NEC 2014 Labels

HellermannTyton pre-printed renewable energy installation labels have a special adhesive for use on both enamel and powder coat paint surfaces. Labels are printed with UV stable ink that is covered by a UV stable laminate. Labels meet the requirements of UL969. NEC 2014 labels can be used to meet NEC 2014 code and are backward compatible to NEC 2011.

Material Data

Material	443/552 UV Stable Flexible White Vinyl w/ Acrylic Laminate
Operating Temperature	-40 °F (-40 °C) to 175 °F (79 °C)
Min. Application Temp.	50 °F (10 °C)
Liner	78# White bleached paper
Certifications	UL969





Material Data

Material	Vinyl
Operating Temperature	18 °F to +200 °F (-29 °C to +93 °C)
Certifications	UL969

RoHS

Perception can confuse reality.

We're working to clarify future labelling code statements to minimize confusion.

Take the perception of using engraved phenolic plates versus labels…

The Guideline

Solar installation labels, when properly designed, warn operators and other exposed persons to the risks associated with equipment operation.

Proper code compliant labelling matters to industry leaders involved in the design, manufacture and maintenance of Photovoltaic installations, who believe equipment safety is essential for successful industry growth. This may also affect those providing maintenance and repair, including third party organisations charged with ongoing service.

The Reality

Many local municipalities still require the use of engraved plates, but the market is changing to better protect first responders and emergency personnel. Adhesive vinyl labels that are red with white text, reflective, and meet UL969 standards are designed to be more visible, more durable, and work on more applications.

The Perception

Many local inspectors believe that only engraved phenolic plates are acceptable, but most local districts do not specify the use of engraved markers. Installers are now able to use (code acceptable) adhesive label options that are in accordance with the dimensional, functional, and verbiage requirements needed to ensure a safe and informative installation. As always, the installer must always check local codes before deciding the best and most cost effective way to label the installation.

The Situation

The primary concern with engraved or etched signage, phenolic plates, is the lack of flexibility, high cost, and lead times which can delay inspections. Typical phenolics, from a trophy shop, are not made with UV stable materials. Printing labels on site, as needed, or purchasing pre-printed inventory saves time and reduces labour costs without sacrificing UV stability and outdoor durability.

The Option

HellermannTyton's solar installation labels are UV durable and feature an ultra-bond adhesive for both powder coat and baked enamel surfaces. Pre-printed with the most common legends to meet the requirements of the local Authorities, the labels are manufactured using ultraviolet resistant ink, permanent acrylic adhesive, and a base material to withstand environmental elements.

The Benefit

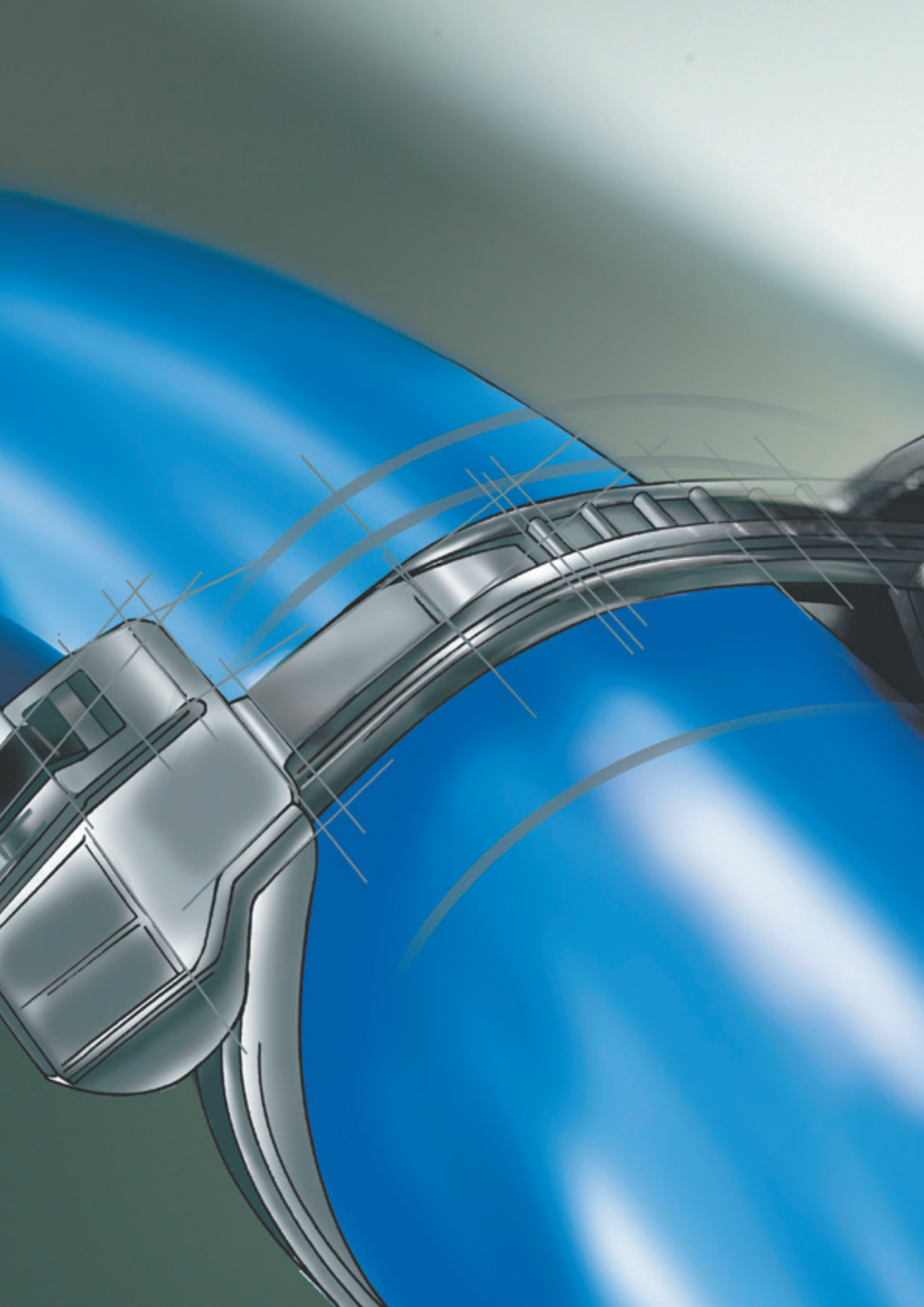
HellermannTyton offers a line of the most commonly used regulatory solar identification labels on large utility and scaled PV installations.

- Significant cost & time savings
- Tested to UL969 standard
- Made with UV stable inks & materials for durability and weather resistance
- Adheres to baked enamel & powder coat painted surfaces
- Supplied with an aggressive adhesive to ensure long life





Notes



Cable Securing Systems



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RoHS — The restriction of the use of certain hazardous substances in electrical and electronic equipment

HF (halogenfree) — Halogen Free

LFH (Limited Fire Hazard) — Limited Fire Hazard

HellermannTyton

Properties of polyamide PA66

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

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

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

$$[\text{-NH}(\text{CH}_2)_6\text{NH-CO}(\text{CH}_2)_4\text{CO}]$$

1st base unit with 6 C atoms

2nd base unit with 6 C atoms

Each base unit contains 6 carbon atoms (C). Hence the name PA66. The polyamide PA66 has many properties which are highly advantageous for **HellermannTyton** cable ties and fixings, such as:

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

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

The following PA66 variants are used for HellermannTyton products:

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

Water content in polyamide

Polyamide is a hygroscopic material - this means that it absorbs and releases water. The mechanical properties are significantly affected by the water content – especially flexibility and minimum tensile strength. In a standard atmosphere of 23°C and 50% relative humidity, the degree of water saturation of polyamide is around 2.5%. For optimal processing of cable ties it is therefore important that the polyamide has a water content of approximately 2.5% in a state of equilibrium.

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

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

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

Properties of UV-stabilised polyamide (PA66W)

The question constantly arises as to whether a black cable tie is suitable for use outside. This is dependant on the application of the tie, but in general the following statements can be made:
A black cable tie made of polyamide 6.6 standard (PA66) is only coloured black with a low proportion of carbon black. This is not sufficient to protect the material from damage caused by UV-radiation in the long term.

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

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

After 500 hours of UV-radiation exposure

Polyamide 6.6 standard (PA66) dyed black



The joint has been damaged throughout by UV-radiation.

Polyamide 6.6 UV-stabilised (PA66W) with at least 2% carbon black



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

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

A simple practical test: "the hammer test"

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

Properties of polyamide PA12

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

$$[\text{-NH}(\text{CH}_2)_{11}\text{CO-}]$$

PA12 has the following advantages over PA66:

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

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

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

Properties of polyamide PA46

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

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

$$[\text{NH-}(\text{CH}_2)_4\text{NH-CO-}(\text{CH}_2)_4\text{-CO-}]$$

1st base unit with 4 C atoms

2nd base unit with 6 C atoms

Advantages of PA46 over PA66:

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

Chemical resistances of various plastics

+ = resistant
o = partly resistant
- = not resistant

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

Medium	Conc. (%)	Temp. (°C)	PA66	PA46	PA12	POM	PP	TPU	Tefzel
Acetaldehyde, liquid	100	23	+	+		+	o	-	+
Acetone	100	23	+	+	+	+	+	-	+
Allyl chloride	100	23					+	-	
Formic acid	98	23	-		-	+	+	-	+
Aniline	100	23	+	o	o	o	+	-	+
Aromatic compounds						+	-		+
Benzaldehyde	any	23	+	o		+	+	-	+
Benzine/benzol mix		23	+	+	+	+	o	o	+
Benzol	100	23	+		+	+	o	-	+
Bromine		23			-		-	-	
Chlorine, gaseous	100	23					-	o	
Chlorine, liquefied	100	23					-		
Chlorobenzene	100	23			-		+		
Chloroform	100	23		-	-		o		
Chromic acid	10	20	o			+	+		+
Chromic acid	20	23	-			-	+		+
Chromic acid	50	20	-			-	+		+
CFC							o		
Cyclohexane	100	23	+			+	+	+	+
Cyclohexanone	100	23	+			+	+		+
Decahydronaphthalene	100	23	+			+	o		+
Diethyl ether	100	23	+			+	o		+
Di-isopropyl ether	100	23					o		
Dimethyl formamide	100	23	+	o		+	+		+
Dioctyl phthalate		23	+			+	+	-	+
Ethanoic acid	10	20	-	o	o	+	+		+
Ethanoic acid	25	20	-			o	+		+
Ethanoic acid	50	20	-			o	+		+
Ethanoic acid	100	23	-	-		o	+		+
Ethyl acetate	tech. pure	23		+	+		o		
Freon		23					+		
Heptane	100	23	+	+	+	+	+		+
Potass. permanganate	<= 6	23	-		-	+	+		+
Ketone				+	+		+	+	+
Methyl ethyl ketone	100	23	+	+		o	+	-	+
Methylisobutylcetone	100	23	+			+	+		+
Engine oil		23			+		+		
Nitrobenzene	100	23	+	o		+	+	-	+
Ordinary petrol		23					+		
Paraffin oil		23	+	+	+	+	+		+
Perchloroethylene		23	+		+	+	o	-	+
Petroleum		23	+	+	+	+	+		+
Phenol	approx. 70	23	-		-	o	+	-	+
Nitric acid	10	20	-		-	-	+	-	+
Nitric acid	50	23	-		-	-	-	-	+
Carbon bisulphide	100	23	+	-	+	+	-	-	+
Sulphuric acid	10	20	-		o	+	+	+	+
Sulphuric acid	50	20	-			-	+	+	+
Sulphuric acid	96	23	-			-	-	+	+
Silicon oil		23	+	+	+	+	+	+	+
Salad oil		23		o			+		
Carbon tetrachloride	100	23	+		o	+	o	-	+
Toluol	100	23	+		+	+	o	-	+
Trichlorethylene	100	23	+		o	+	o	-	+
Water, cold							+		
Water, hot							+		
Hydrogen peroxide	10	20	-			+	+		+
Hydrogen peroxide	30	23	-	-		+	+	+	+
Xylene	100	23	+	+	+	+	o	-	+

Introduction to the three common locking technologies used for cable ties

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

Cable ties with plastic pawls

This technology is used in 90% of all polyamide (PA) cable ties applied by HellermannTyton. In order to cover a variety of applications, there are different variants of this system, for example: releasable versions, in-line versions, open head versions.
These are one-piece cable ties, that is the pawl is moulded as an integral part of the cable tie, thereby building in inherent strengths.

Locking technology

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

KR series cable ties

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

Locking technology

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

MBT series of cable ties

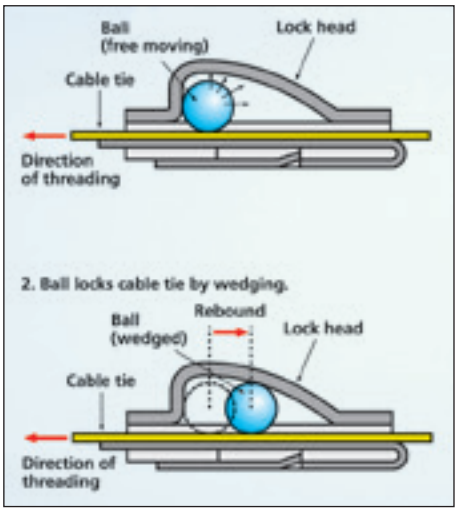
Made of stainless steel grades 304 or 316, the MBT range of cable ties have no serrations on the strap and are threaded parallel through the head, gliding under a metal ball-bearing locking mechanism. By using the MK9SST (see page 2/10) application tool the cable tie is tensioned and the strap cut to a flush finish.

Locking technology

The strap is locked into the head by means of the small ball-bearing. The ball locks into the small end of the wedged shape housing, forming a positive locking with the strap.
This cable tie is not suitable for rigid objects. Retraction of the ball-bearing (see drawing Fig 1.) is required into the small end of the wedged shaped housing to allow for a positive locking of the strap and also to make a flush cut of the end of the strap. Retraction, therefore, cannot take place with the bundling of inflexible materials. To bundle rigid objects LFPC channel (see page 2/40) should be laid as buffer between strap and bundled material to compensate for this retraction. This locking technology allows for minimum tensile strengths of up to 2225 Newton (227kg).



Fig 1.



Determination of minimum tensile strength

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

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

Explanation of minimum tensile strengths

What does a minimum tensile strength of 225N (22kg) mean?
To explain what this value means, the **mass** with which the tie can be loaded is calculated. The unit of measurement of the mass is stated in **kg**. To do so, the unit Newton (N) is shown in the following way:

[N] = [kg * m/s2]

The formula for calculating the mass is:

Mass =
minimum tensile strength/acceleration due to gravity

The acceleration due to gravity is 9.81m/s2:

Mass =
minimum tensile strength/ [kg * m/s2] /9.81 [m/s2]

At a minimum tensile strength of 225N (22kg) the mass is:

Mass = 225 [kg * m/s2] /9.81 [m/s2]

The units m/s2 cancel each other out, leaving the unit [kg] for the mass. Thus:

Mass = 225/9.81kg = 22.9kg

Therefore, a T50R cable tie with a minimum tensile strength of 225N (22kg) can be loaded with 22.9kg.
Conversely, with the required loading capacity the minimum tensile strength can be calculated by a mass:

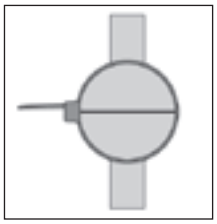
Min. tensile strength =
mass * 9.81[m/s2]

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

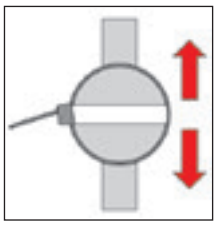
Minimum tensile strength =
[53kg] * 9.81 [m/s2] = 520N

In order to withstand a load of 53kg, the tie must therefore have a minimum tensile strength of 520N. In this case, select our T120R with a minimum tensile strength of 535N (54kg).

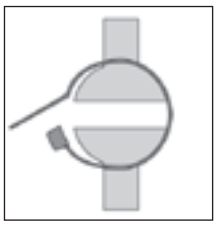
The test procedure to determine minimum tensile strength



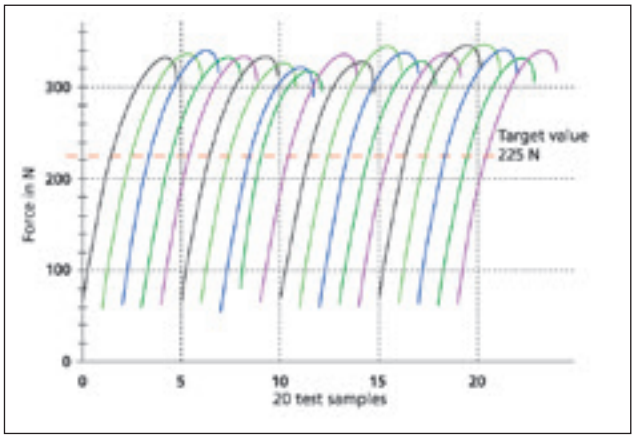
The cable tie is fixed onto a split mandrel test probe with the suitable cable tie application tool.



The mandrel is opened at a defined speed.



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



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



225N/9,81 = 22,9kg



*53kg * 9.81 = 520N*

Optimum storage conditions for cable ties made of polyamide (PA)

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

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

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



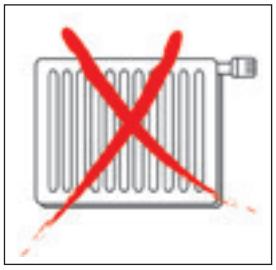
Always store ties in the sealed plastic bag made of polyethylene.

Once opened you should use the ties as quickly as possible.



Do not expose the product to direct sunlight.

Do not store the product in sunlight; for example, on the window sill.



Store the product away from direct sources of heat.

Avoid contact with heat: for example, do not place on the radiators.

The ideal storage conditions are those of African standard climate:



23 °C

50% relative humidity



HellermannTyton cable ties conform to DIN standard

HellermannTyton is a supplier of high quality solutions for the routing, organising and securing of cables, hoses and pipes. The level of quality has been inspected by the VDE (Verband der Elektrotechnik, Elektronik, Informationstechnik e.V) [German Association for Electrical, Electronic and Information Technologies]. Cable ties from the inside-serrated T-Series and the outside serrated OS-Series have been tested in accordance with the cable tie standard DIN EN 50146 (VDE 0604 PART 201): 2000-12; EN 50146:1999-08. The result of this independent testing is complete compliance:

These cable ties therefore qualify to bear the VDE symbol.

In addition to cable ties made of the standard material polyamide 6.6 (PA66), ties made from heat-stabilised (PA66H) and UV-stabilised polyamide 6.6 (PA66W) have been successfully tested and approved.
HellermannTyton is the only manufacturer to offer cable ties with inside and outside serration with DIN approval. So all current applications in the field of electrical installation are covered.

The standard includes the following tests:

- Test of minimum installation temperature.
- Test of minimum application temperature.
- Minimum tensile strength (in the standard this is described as the looping test).
- Load test and heat ageing test.
- Temperature cycle test.
- Contribution to the spread of fire.
- Corrosion resistance.

The following HellermannTyton cable ties have been tested and certified:

T-Series inside-serrated cable ties

Polyamide 6.6 (all colours)	38 types x 11 colours	=	418 cable ties
Polyamide 6.6 heat-stabilised (all colours)	38 types x 11 colours	=	418 cable ties
Polyamide 6.6 UV-stabilised (black)	38 types in black	=	38 cable ties
Total number of cable ties in T-Series to DIN standard			874 cable ties

OS-series outside-serrated cable ties (see page 2/29)

Polyamide 6.6 heat-stabilised (all colours)	7 types x 11 colours	=	77 cable ties
Total number of cable ties in OS series to DIN standard			77 cable ties
Total number of HellermannTyton cable ties to DIN standard			**951 cable ties**

Material Specification

Material	Operating Temperature	Colour	Flammability	Chem. Material Properties
Ethylenterafluorineethylene - Tefzel (E/TFE) RoHS	-80°C to +150°C	Blue (BU)	UL94 V0	This material absorbs radioactive and electron beams as well as UV-radiation. It has very good chemical resistance, particularly with respect to acids, bases and oxidising agents. It does not absorb water.
Polyamide 6.6 High Impact Modified (PA66HIR) RoHS	-40°C to +80°C Continuous, (+105°C for 500 h)	Black (BK)	UL94 HB	The slightly impact-modified polyamide 6.6 (HIR) can also be processed at low temperatures.
Polyamide 6.6 High Impact Modified, Heat Stabilised (PA66HIRHS) RoHS	-40°C to +105°C	Black (BK)	UL94 HB	This material has the same properties as polyamide 6.6 HIR but, through the use of additives, has a temperature range extending to + 105°C.
Polyacetal (POM) RoHS	-40°C to +85°C	Natural (NT), Black (BK)	UL94 HB	This highly flexible material is resistant to both UV-radiation and to the effect of chemicals. The slightly impact-modified POM has a high tensile strength and remains flexible even at low temperatures. The technical properties of POM are not affected by moisture.
Stainless Steel Type SS304, Type SS316 RoHS	-80°C to +538°C	Metal	–	A distinctive feature of this material is its corrosion resistance, it is non-rusting and antimagnetic.

Material Specification, Halogen Free

Material	Operating Temperature	Colour	Flammability	Chem. Material Properties
Polyamide 12 (PA12) RoHS	-40°C to +85°C Continuous, (+105°C for 500 h)	Black (BK)	UL94 HB	Polyamides 11 and 12 have good chemical resistance. They have limited resistance to acids, bases and oxidising agents but very good UV-stability. The melting of N11 (185°C) is higher than that of N12 (175 °C).
Polyamide 6.6 (PA66) RoHS	-40°C to +85°C Continuous, (+105°C for 500 h)	Natural (NT), Black (BK)**	UL94 V2	This material has a very high tensile strength and can be used up to a temperature of +85°C.
Polyamide 6.6 Heat Stabilised (PA66HS) RoHS	-40°C to +105°C Continuous, (+145°C for 500 h)	Natural (NT), Black (BK)**	UL94 V2	This material has the same properties as polyamide 6.6 (N66) but, through the use of additives in the material, the temperature range has been extended up to + 105°C.
Polyamide 6.6 UV Resistant (PA66W) RoHS	-40°C to +85°C Continuous, (+105°C for 500 h)	Black (BK)	UL94 V2	This material has been rendered weather resistant by the use of additives. It is particularly suitable for outdoor use, i.e. in direct sunlight.
Polypropylene (PP) RoHS	-20°C to +85°C	Natural (NT), Black (BK)**	UL94 HB	Polypropylene has a good resistance to organic acids. The density of the material is less than that of water and so polypropylene floats.
Thermoplastic Polyurethane (TPU) RoHS	-40°C to +85°C Halogen Free	Black (BK)	UL94 HB	Thermoplastic polypropylene is highly elastic and resistant to UV-light. It has good chemical resistance to acids, bases and oxidising agents.

Material Specification, Limited Fire Hazard

Material	Operating Temperature	Colour	Flammability	Chem. Material Properties
Polyamide 4.6 (PA46) RoHS	-40°C to +150°C for 5000 h, (+195°C for 500 h)	Natural (NA), Grey (GY)**	UL94 V2	Polyamide 4.6 withstands high temperatures. The combustion performance of this plastic meets UL94 V2. It is also halogen free and, in the event of a fire, is characterised by its minimal generation of smoke, toxic fumes and corrosive acids.
Polyamide 6.6 V0 (PA66V0) RoHS	-40°C to +85°C Continuous, (+105°C for 500 h)	White (WH)	UL94 V0	This material conforms with both the UL94 V0 standards and the requirements relating to low smoke generation and evolution of toxic gases and corrosive acids in the event of a fire.
Polyolefin RoHS	-40°C to +90°C	Black (BK)	UL94 V0	Polyolefins also have flame propagation characteristics in compliance with UL94 V0. They are halogen free, self-extinguishing and, in the event of a fire, are characterised by their minimal generation of smoke, toxic fumes and corrosive acids. They are stable in water, salt solutions, acids and oxidising agents.

Tefzel® is a registered trademark of DuPont.
* These details are only rough guide values. They should be regarded as a material specification and are no substitute for a suitability test. Please see our datasheets for further details.
** Other colours on request.

(halogenfree)
(Limited Fire Hazard)

Cable Ties

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MK3TEN - Tensioning Tool

- For nylon cable ties only with adjusting tensioning force
- This lightweight tool is ideal for continuous production work
- The MK3TEN can be used for T18, T30 and T50 Series cable ties
- Maximum width of Tie: 4.8mm
- Dimensions (mm): 184 (L) x 128 (H) x 24 (W)
- Weight: 0.3kg





Nylon Cable Tie
Tensioned/Cut/No sharp edges

EVO7TOOL - Tensioning Tool

- For nylon cable ties only with adjusting tensioning force
- Ergonomically lightweight tool
- Extended slim nose to operate in narrow spaces
- The EVO7TOOL can be used from T18 to T50 Series cable ties
- Maximum width of Tie: 5.1mm
- Dimensions (mm): 191 (L) x 138 (H) x 34 (W)
- Weight: 0.27kg





Nylon Cable Tie
Tensioned/Cut/No sharp edges

TG007 - Plastic Frame Tensioning Tool

- For nylon cable ties only with adjusting tensioning force
- This lightweight tool is ideal for heavy duty production work
- The TG007 can be used for T18, T30 and T50 Series cable ties
- Maximum width of Tie: 4.8mm
- Dimensions (mm): 165 (L) x 135 (H) x 25 (W)
- Weight: 0.21kg





Nylon Cable Tie
Tensioned/Cut/No sharp edges

TG008 - Steel Frame Tensioning Tool

- For nylon cable ties only with adjusting tensioning force
- This lightweight tool is ideal for heavy duty production work
- The TG008 can be used for T18, T30 and T50 Series cable ties
- Maximum width of Tie: 4.8mm
- Dimensions (mm): 160 (L) x 135 (H) x 25 (W)
- Weight: 0.3kg

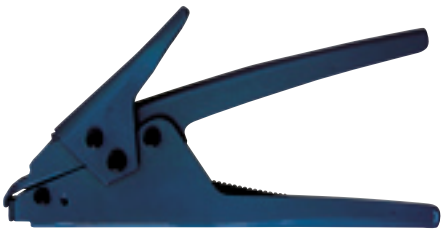




Nylon Cable Tie
Tensioned/Cut/No sharp edges

MK10TEN - Tensioning Tool

- For nylon cable ties only with adjusting tensioning force
- This lightweight tool is ideal for heavy duty production work
- The MK10TEN can be used for T18, T50 and T120 Series cable ties
- Maximum width of Tie: 9.5mm
- Dimensions (mm): 190 (L) x 95 (H) x 30 (W)
- Weight: 0.5kg





Nylon Cable Tie
Tensioned/Cut/No sharp edges

MK9TEN - Tensioning Tool

- For nylon cable ties only with adjusting tensioning force
- Tensioning tool for heavy duty production work
- The MK9TEN can be used for T18 to LK5 Series cable ties
- Maximum width of Tie: 13.5mm
- Dimensions (mm): 190 (L) x 150 (H) x 40 (W)
- Weight: 0.385kg





Nylon Cable Tie
Tensioned/Cut/No sharp edges

MK9SST - Stainless Steel Tensioning Tool

- For stainless steel cable ties only
- Tensioning tool for heavy duty production work
- The MK9SST can be used for MBT8, MBT14, MBT20 and MBT27 Series cable ties
- Maximum width of Tie: 4.6 - 13mm
- Dimensions (mm): 190 (L) x 150 (H) x 40 (W)
- Weight: 0.6kg





Stainless Steel Cable Tie
Tensioned/Cut/No sharp edges

HT338 - Budget Stainless Steel Tensioning Tool

- Fastens and automatically cuts ties with adjustable bundling pressure
- Tension adjusting indicator
- For cable tie thickness up to 0.3mm. Width up to 7.9mm
- Suitable for HellermannTyton MBT cable ties MBT8, MBT14, MBT20 and MBT27





Stainless Steel Cable Tie
Tensioned/Cut/No sharp edges

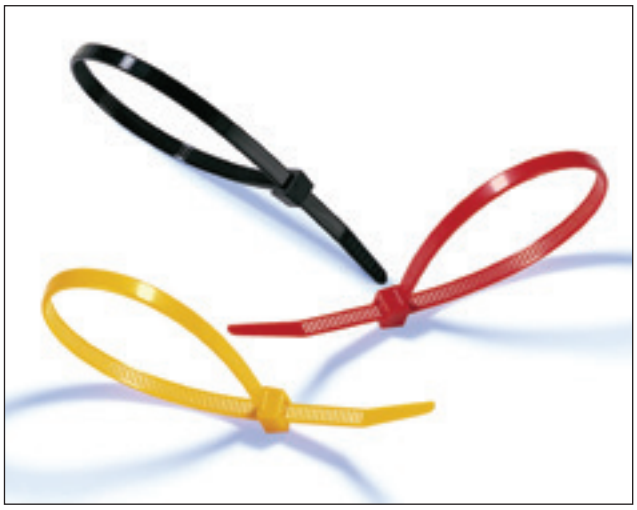
T Series MIL Spec Ties

Features and Benefits

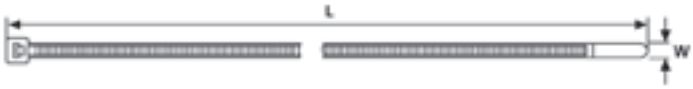
Available in a wide range of materials, these cable ties all feature internal serrations allowing for a positive hold onto cable, hose and pipe bundles. The design of the head guarantees a high tensile strength whilst allowing a very low insertion force. This, combined with the bent tail design of many of the ties, ensures a simple and quick installation. Whilst easily installed by hand - manual and pneumatic (for high volume applications) tensioning tools are available to ensure a consistent and safe installation.

Application

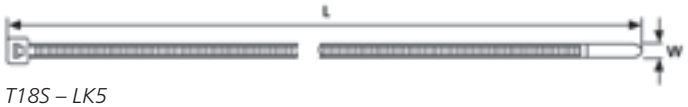
For the routing, bundling and securing of cables, pipes and hoses.



T Series for bundling and securing of cables for a wide range of applications, available in various colours and materials.



Please Note for Product Specific Approvals please refer to Appendix.



T18S – LK5

Product Selection

Type	Length (L)	Width (W)	Bundle Ø max.	Min. Tensile Strength (N)	Material	Colour	Pkg. Qty.
***Polyamide 6.6 (PA66)**							
T18SNT	83	2.3	16	80	PA66	Natural (NT)	100
T18SBK	83	2.3	16	80	PA66	Black (BK)	100
T18RNT	100	2.5	22	80	PA66	Natural (NT)	100
T18RBK	100	2.5	22	80	PA66	Black (BK)	100
T30RNT	150	3.5	35	135	PA66	Natural (NT)	100
T30RBK	150	3.5	35	135	PA66	Black (BK)	100
T50RNT	200	4.6	50	225	PA66	Natural (NT)	100
T50RBK	200	4.6	50	225	PA66	Black (BK)	100
T50INT	300	4.6	85	225	PA66	Natural (NT)	100
T50IBK	300	4.6	85	225	PA66	Black (BK)	100
T50LNT	390	4.6	110	225	PA66	Natural (NT)	100
T50LBK	390	4.6	110	225	PA66	Black (BK)	100
T120GSNT	225	7.6	55	535	PA66	Natural (NT)	100
T120GSBK	225	7.6	55	535	PA66	Black (BK	100
T120SNT	278	7.6	55	535	PA66	Natural (NT)	100
T120SBK	278	7.6	55	535	PA66	Black (BK)	100
T120RNT	390	7.6	105	535	PA66	Natural (NT)	50
T120RBK	390	7.6	105	535	PA66	Black (BK)	50
T120RL	500	7.8	105	535	PA66	Black (BK)	50
LK5NT	535	13.2	150	1115	PA66	Natural (NT)	50
LK5BK	535	13.2	150	1115	PA66	Black (BK)	50
Insulok Nylon Colour Cable Ties (Blue, Brown, Orange, Pink, Red, Violet, Yellow, White)							
T18R$	100	2.5	22	80	PA66		100
T30R$	150	3.5	35	135	PA66		100
T50R$	200	4.6	50	225	PA66		100
T50I$	300	4.6	85	225	PA66		100
T50L$	390	4.6	110	225	PA66		100
T120S$	278	7.6	55	535	PA66		100
T120R$	390	7.6	105	535	PA66		50
LK5$	535	13.2	150	1115	PA66		50
Insulok Nylon Colour Cable Ties Mixed (MC – Mixed Standard Colours, MDC – Mixed Colours Day Glo)							
T18RMC	100	2.5	22	80	PA66	Various	100
T18RMDC	100	2.5	22	80	PA66	Day-Glo	50
T30RMC	150	3.5	35	135	PA66	Various	100
T30RMDC	150	3.5	35	135	PA66	Day-Glo	50
T50RMC	200	4.6	50	225	PA66	Various	100
T50RMDC	200	4.6	50	225	PA66	Day-Glo	50

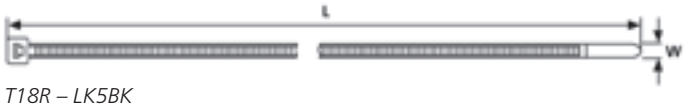
Dimensions are approximate and subject to technical changes. Use Code for ordering and Type for specification purposes.

For Application Tools please refer to Page 2/10.

***Please note that Polypropylene cable ties are available upon request.**

Please Note for Product Specific Approvals please refer to Appendix.

Cable Ties – Local / Outdoor use (UV and weather resistant)

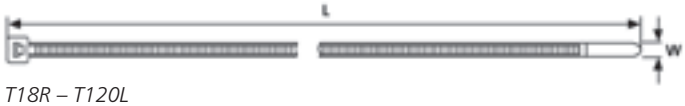


T18R – LK5BK

Product Selection

Type	Length (L)	Width (W)	Bundle Ø max.	Min. Tensile Strength (N)	Material	Colour	Pkg. Qty.
***Polyamide 6.6 (PA66W) UV-resistant**							
T18SBK	83	2.3	16	80	PA66W	Black (BK)	100
T18RBK	100	2.5	22	80	PA66W	Black (BK)	100
T30RBK	150	3.5	35	135	PA66W	Black (BK)	100
T50RBK	200	4.6	50	225	PA66W	Black (BK)	100
T50IBK	300	4.6	85	225	PA66W	Black (BK)	100
T50LBK	390	4.6	110	225	PA66W	Black (BK)	100
T120SBK	278	7.6	55	535	PA66W	Black (BK)	100
T120GSBK	225	7.6	55	535	PA66W	Black (BK)	100
T120RBK	390	7.6	105	535	PA66W	Black (BK)	50
LK5BK	535	13.2	150	1115	PA66W	Black (BK)	50

***Please note the PA66W cable tie range is suitable for application in harsh and high UV-environments.**
UV test reports available on request.



T18R – T120L

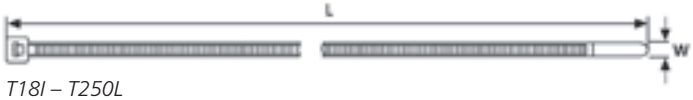
Technical Table

Code	Length (L)	Width (W)	Bundle Ø max.	Min. Tensile Strength (N)	Material	Colour	Pkg. Qty.
Polyamide 6.6 V0 Rated							
T18R	100	2.5	22	80	PA66V0	Natural (NT)	100
T18L	205	2.5	55	80	PA66V0	White (Wh)	1000
T30R	150	3.5	35	135	PA66V0	White (Wh)	100
T50R	200	4.6	50	225	PA66V0	Natural (NT)	100
T50I	300	4.6	85	225	PA66V0	White (Wh)	100
T120R(E)	390	7.6	105	535	PA66V0	White (Wh)	100
TEFZEL/ETFE							
T18R(U)	100	2.5	40	1115	E/TFE	Blue (BL)	100
T30R(U)	150	3.5	135	1115	E/TFE	Blue (BL)	100
T50R(U)	200	4.6	158	1115	E/TFE	Blue (BL)	100
Polyamide 4.6 High Temp							
T30R	150	3.5	135	1115	PA46	Natural (NT)	100
T50R	200	4.6	225	1115	PA46	Natural (NT)	100
T50I	300	4.6	225	1115	PA46	Natural (NT)	100
T50L	390	4.6	225	1115	PA46	Natural (NT)	100
T120R	360	7.6	535	1115	PA46	Natural (NT)	100
T120L	760	7.6	535	1115	PA46	Black (BK)	50

Dimensions are approximate and subject to technical changes. Use Code for ordering and Type for specification purposes.

For Application Tools please refer to Page 2/10.

Please Note for Product Specific Approvals please refer to Appendix.



T18I – T250L

Product Selection

Code	Length (L)	Width (W)	Bundle Ø max.	Min. Tensile Strength (N)	Material	Colour	Pkg. Qty.
Polyamide 6.6 (PA66)							
T18I	140	2.5	35	80	PA66	Natural (NT)	1000
T18I	140	2.5	35	80	PA66	Black (BK)	100
T18L	205	2.5	55	80	PA66	Natural (NT)	1000
T18L	205	2.5	55	80	PA66	Black (BK)	1000
T25L	240	2.8	65	110	PA66	Natural (NT)	100
T25L	240	2.8	65	110	PA66	Black (BK)	100
T25LL	330	2.8	95	110	PA66	Natural (NT)	100
T25LL	330	2.8	95	110	PA66	Black (BK)	100
T30L	190	3.5	50	135	PA66	Natural (NT)	500
T30L	190	3.5	50	135	PA66	Black (BK)	500
T30LL	290	3.5	80	135	PA66	Natural (NT)	500
T30LL	290	3.5	80	135	PA66	Black (BK)	500
T40L	365	4.0	105	180	PA66	Natural (NT)	100
T40L	365	4.0	105	180	PA66	Black (BK)	100
T40R	175	4.0	45	180	PA66	Natural (NT)	100
T40R	175	4.0	45	180	PA66	Black (BK)	100
T50S	150	4.6	35	225	PA66	Natural (NT)	500
T50S	150	4.6	35	225	PA66	Black (BK)	500
T50M	245	4.6	65	225	PA66	Natural (NT)	100
T50M	245	4.6	65	225	PA66	Black (BK)	100
T50LL	445	4.6	130	225	PA66	Natural (NT)	100
T50LL	445	4.6	130	225	PA66	Black (BK)	100
T80R	210	4.7	55	355	PA66	Natural (NT)	100
T80R	210	4.7	55	355	PA66	Black (BK)	100
T80I	300	4.7	85	355	PA66	Natural (NT)	100
T80I	300	4.7	85	355	PA66	Black (BK)	100
T80L	390	4.7	110	355	PA66	Natural (NT)	100
T80L	390	4.7	110	355	PA66	Black (BK)	100
T120I	300	7.6	80	535	PA66	Natural (NT)	100
T120I	300	7.6	80	535	PA66	Black (BK)	100
T120M	460	7.6	130	535	PA66	Natural (NT)	100
T120M	460	7.6	130	535	PA66	Black (BK)	100
T120XM	600	7.6	175	535	PA66	Natural (NT)	50
T120L	760	7.6	225	535	PA66	Natural (NT)	50
T120L	760	7.6	225	535	PA66	Black (BK)	50
T150M	530	8.9	150	780	PA66	Natural (NT)	25
T150M	530	8.9	150	780	PA66	Black (BK)	25
T150L	820	8.9	245	780	PA66	Natural (NT)	25
T150L	820	8.9	245	780	PA66	Black (BK)	25
T150XL	1095	8.9	330	780	PA66	Natural (NT)	25
T250S	225	12.5	55	1115	PA66	Natural (NT)	100
T250S	225	12.5	55	1115	PA66	Black (BK)	100
T250X	370	12.5	100	1115	PA66	Natural (NT)	100
T250X	370	12.5	100	1115	PA66	Black (BK)	100
T250L	880	12.5	254	1115	PA66	Natural (NT)	25
T250L	880	12.5	254	1115	PA66	Black (BK)	25

Dimensions are approximate and subject to technical changes. Use Code for ordering and Type for specification purposes.

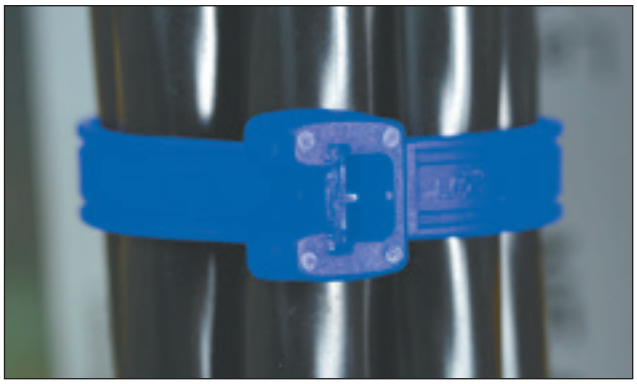
For Application Tools please refer to Page 2/10.

Please Note for Product Specific Approvals please refer to Appendix.

Q-tie Cable Tie

Innovative – Effective – Safe!

The new Q-tie has not only an innovative but also a revolutionary design.
The openhead of the cable tie enables a simple and quick installation. Just insert the ergonomically bent tail into the open side of the head and tighten the cable tie.
With Q-ties you can save time and money!



The head design makes the difference.

Easy application for every situation!

Q-tie is the perfect product solution for applications under difficult working conditions. It is designed for use in applications where working with gloves is necessary or for blind applications with a limited view of the work.
The new Q-tie allows a quick and simple installation even with work gloves and restricted view.
Features for quick and easy application:
• Curved and large ribbed tail.
• Open head with easy detectable slot.
This saves time and trouble!



Even under difficult circumstances the Q-ties are very fast and easy to apply.

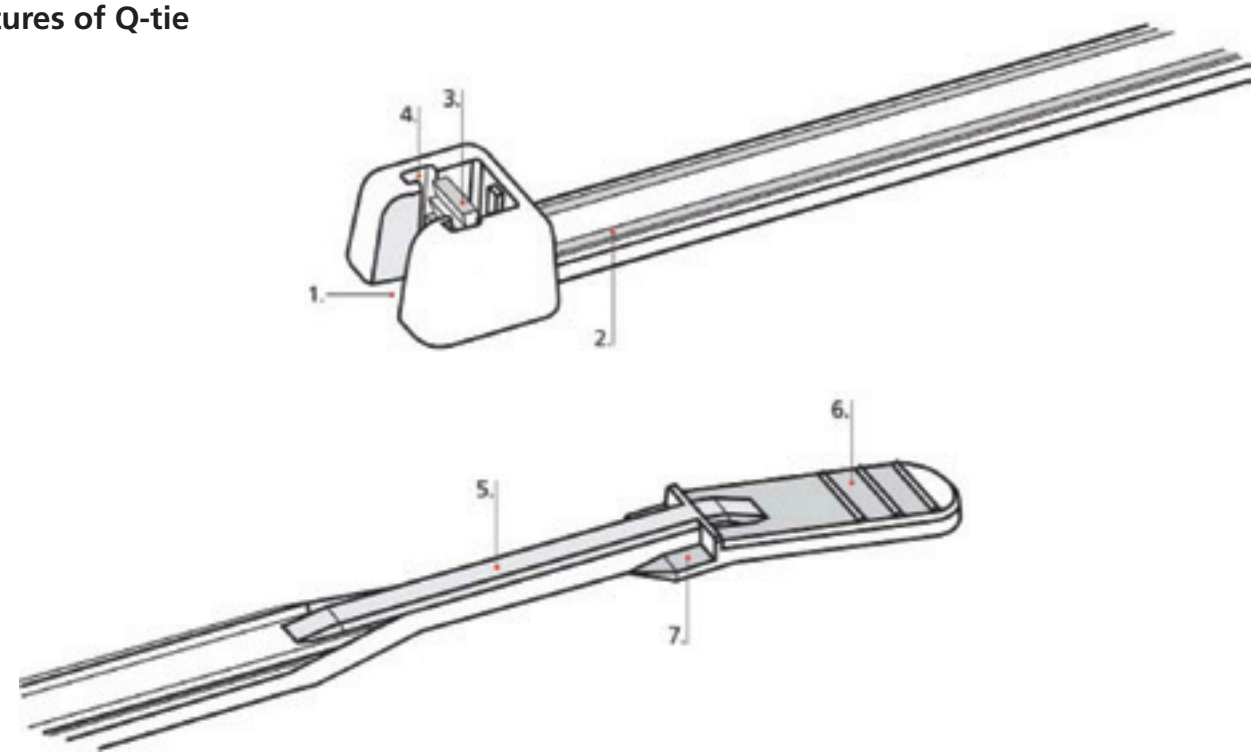
Integrated Pre-Locking Functionality!

Due to several simultaneous working processes, it is not always possible to install all cables and conduits in one single step. Thus, working with standard cable ties means either destroying the cable tie of the first installation or applying additional cable ties. The integrated pre-locking function of the Q-tie offers the ability of a temporary and final cable fastening solution.
This saves material and time!



Without additional effort Q-ties can be used for temporary and final cable bundling.

Features of Q-tie



1. Open lock head for quick and easy insertion of tail.
2. Two rails on the strap ensure perfect alignment of the tracks in the head.
3. The locking device engages safely with the serration of the cable tie.
4. The tracks prevent deformation of the head under load.
5. The narrow part of the cable tie can be simply placed into the open lock head.
6. The large ribbed tail allows a safe and ergonomic installation.
7. Integrated pre-locking feature provides safe closure of tie prior to final tensioning.

Application method



1. Insert the thin part of the cable tie into the open lock head.

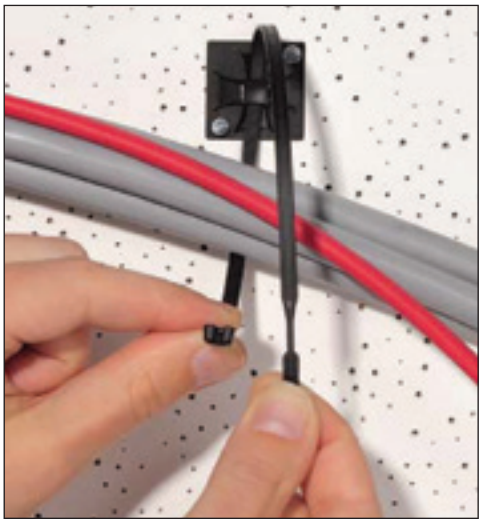


2. Pull the tie through the head until the bundle is fixed.
3. Cut off the remaining part of the tie with an application tool.

Pre-locking function of the Q-tie



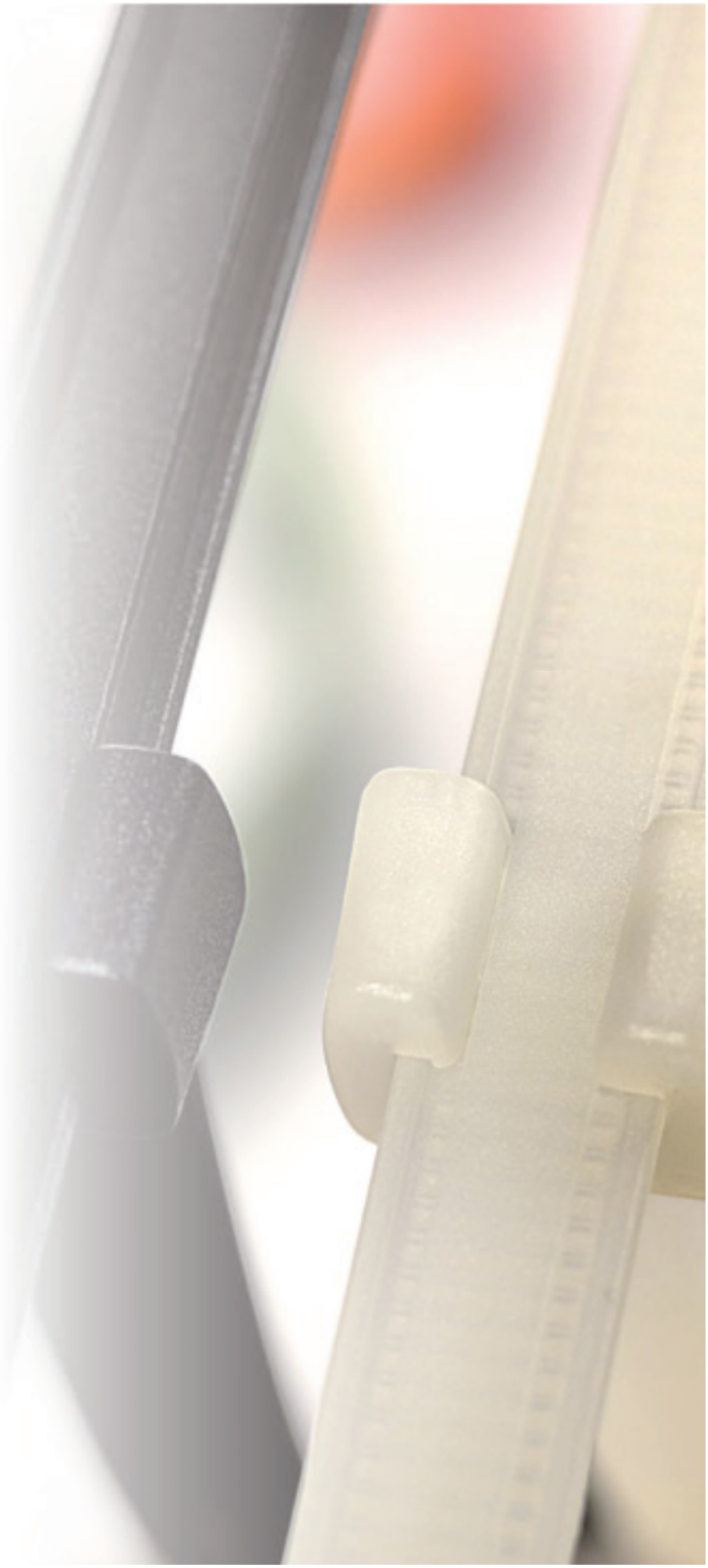
1. Insert tail into lock head and push tail partly in the head.



2. To release the tie push tail end slightly out of head.

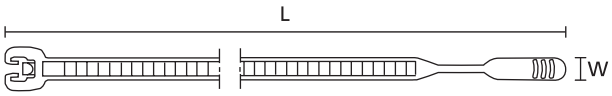


3. If installation is finished, Q-tie can be tightened and cut off - either manually or with an application tool.

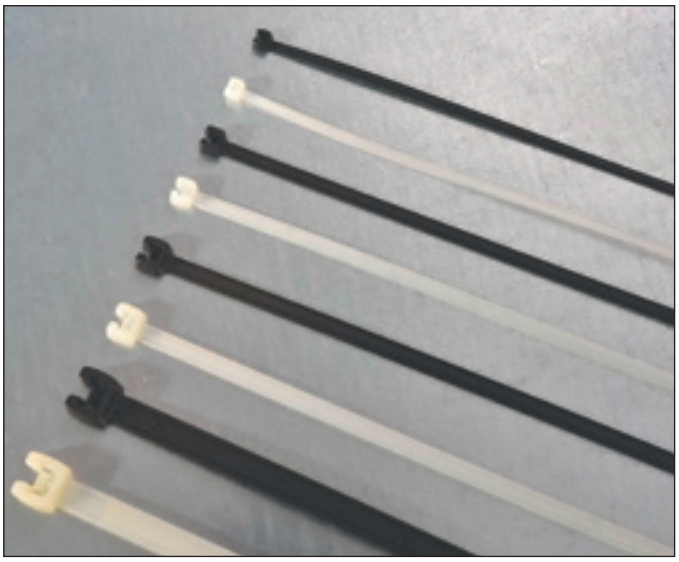


Cable ties with open head

• Q-ties, Polyamide 6.6 (PA66), natural and black.



Q-tie cable tie



Q-tie cable ties: choose from a wide product range in different materials.

Material Data

Material	Polyamide 6.6 (PA66)
Colour	Natural (NA), Black (BK)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

RoHS

HF (halogenfree)

Technical Table

Article-No.	Type	Length (L)	Width (W)	Bundle Ø max.	Min. Tensile Strength (N)	Material	Colour
Polyamide 6.6 (PA66)							
109-00001	**Q18R**	105	2.6	24.0	80	PA66	Natural (NA)
109-00004	**Q18I**	155	2.6	40.0	80	PA66	Natural (NA)
109-00007	**Q18L**	195	2.6	50.0	80	PA66	Natural (NA)
109-00010	**Q30R**	160	3.6	38.0	130	PA66	Natural (NA)
109-00012	**Q30L**	200	3.6	50.0	130	PA66	Natural (NA)
109-00014	**Q30LR**	250	3.6	65.0	130	PA66	Natural (NA)
109-00018	**Q50R**	210	4.7	50.0	220	PA66	Natural (NA)
109-00020	**Q50I**	290	4.7	75.0	220	PA66	Natural (NA)
109-00022	**Q50L**	410	4.7	110.0	220	PA66	Natural (NA)
109-00024	**Q120I**	300	7.7	70.0	530	PA66	Natural (NA)
109-00026	**Q120R**	420	7.7	110.0	530	PA66	Natural (NA)
109-00028	**Q120M**	520	7.7	145.0	530	PA66	Natural (NA)
109-00030	**Q18R**	105	2.6	24.0	80	PA66	Black (BK)
109-00033	**Q18I**	155	2.6	40.0	80	PA66	Black (BK)
109-00036	**Q18L**	195	2.6	50.0	80	PA66	Black (BK)
109-00039	**Q30R**	160	3.6	38.0	130	PA66	Black (BK)
109-00041	**Q30L**	200	3.6	50.0	130	PA66	Black (BK)
109-00043	**Q30LR**	250	3.6	65.0	130	PA66	Black (BK)
109-00047	**Q50R**	210	4.7	50.0	220	PA66	Black (BK)
109-00049	**Q50I**	290	4.7	75.0	220	PA66	Black (BK)
109-00051	**Q50L**	410	4.7	110.0	220	PA66	Black (BK)
109-00053	**Q120I**	300	7.7	70.0	530	PA66	Black (BK)
109-00055	**Q120R**	420	7.7	110.0	530	PA66	Black (BK)
109-00057	**Q120M**	520	7.7	145.0	530	PA66	Black (BK)

All dimensions in mm. Subject to technical changes.

For Application Tools please refer to Page 2/10.

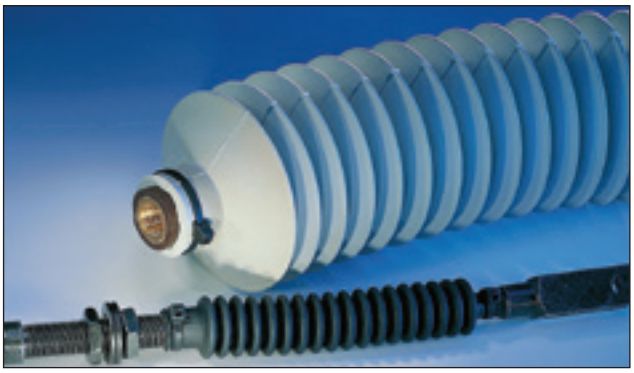
CTT, HT Hose Ties

Features and Benefits

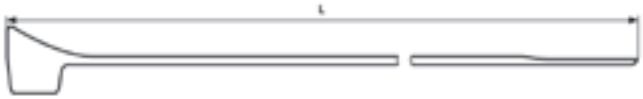
The curved design of the head ensures a seal around the full circumference of the hose/gaiter giving excellent protection against the ingress of water or dirt. For optimum sealing performance it is recommended that the correct HellermannTyton application tool is used. Both hand operated and pneumatic tools are available.

Application

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



CTT ties installed on flexible gaiters.



CTT Hose Ties

Material Data

RoHS

Material	Polyamide 6.6 Heat Stabilised (PA66HS)
Operating Temperature	-40°C to +105°C Continuous, (+145°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)

Material Data

RoHS

Material	Polyamide 6.6 (PA66)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)

Material Data

RoHS

Material	Polyamide 6.6 Heat and UV Stabilised (PA66HSW)
Operating Temperature	-40°C to +105°C Continuous, (+145°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)

Technical Table

Code	Length (L)	Width (W)	Bundle Ø max.	Min. Tensile Strength (N)	Material	Colour
CTT20R						
CTT20R	100	2,5	13	90	PA66	Natural (NT)
CTT60R						
CTT20R	100	2,5	13	90	PA66	Black (BK)
CTT60R	205	4.7	45	265	PA66	Natural (NT)
CTT60R	205	4.7	45	265	PA66	Black (BK)
CTT60R	205	4.7	45	265	PA66HSW	Black (BK)
CTT60R	205	4.7	45	265	PA66HS	Black (BK)
HRT50R						
HRT50R	275	4.7	70	225	PA66	Natural (NT)
HT120R						
HT120R	340	7.6	90	535	PA66HS	Black (BK)

All dimensions in mm. Subject to technical changes.
For Application Tools please refer to Page 2/10.

Please Note for Product Specific Approvals please refer to Appendix.

DH Series Double Headed Ties

Features and Benefits

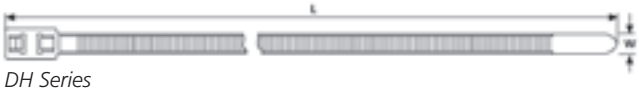
Designed with two heads, these ties can be assembled into a 'figure 8' for securing two cables. Its flexible adjustment means that the bundles can be of different sizes.

Application

Ideal for running two cables in parallel, that need to be separated. These ties allow for installation of a second cable run without the need for additional cable ties.
The DH ties are also widely used within the packaging industry - the first loop closes and secures the bag, whilst the second loop can be made into a carrying handle (subject to weight).



Bundling two cable runs using the DH ties.



DH Series

Material Data

RoHS

Material	Polyamide 6.6 (PA66)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)

Material Data

RoHS

Material	Polyamide 4.6 (PA46)
Operating Temperature	-40°C to +150°C for 5000 h, (+195°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)

Material Data

RoHS

Material	Polyamide 6.6 UV Resistant (PA66W)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)

Material Data

RoHS

Material	Polyamide 6.6 Heat Stabilised (PA66HS)
Operating Temperature	-40°C to +105°C Continuous, (+145°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)

Technical Table

Code	Length (L)	Width (W)	Ø per loop max.	Min. Tensile Strength (N)	Min. Tensile Strength (N) 2nd Loop	Material	Colour
T50RDH	210	4.7	50	225	180	PA66	Black (BK)
T50RDH	210	4.7	50	225	180	PA66	Natural (NT)
T50RDH	210	4.7	50	225	180	PA66W	Black (BK)
T50RDH	210	4.7	50	225	180	PA66HS	Black (BK)
T50RDH	210	4.7	50	225	180	PA46	Grey (GY)
T50IDH	305	4.7	38	225	180	PA66	Black (BK)
T50IDH	305	4.7	38	225	180	PA66	Natural (NT)
T50IDH	305	4.7	38	225	180	PA66W	Black (BK)
T50LDH	395	4.7	50	225	180	PA66	Black (BK)
T50LDH	395	4.7	50	225	180	PA66	Natural (NT)
T50LDH	395	4.7	110	225	180	PA66W	Black (BK)
T50LDH	395	4.7	110	225	180	PA66HS	Black (BK)

All dimensions in mm. Subject to technical changes.
For Application Tools please refer to Page 2/10.

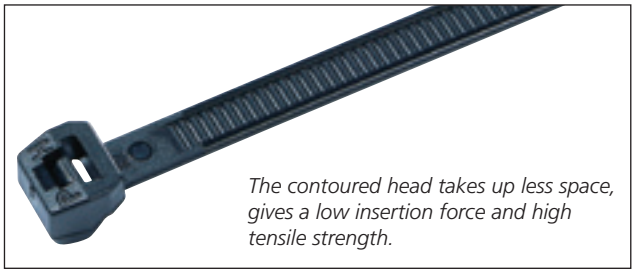
Please Note for Product Specific Approvals please refer to Appendix.

OS Series Outside Serrated Ties

Features and Benefits

The ever increasing demands within the mass transit, automotive and data cable installation industries for tighter bundles has led to problems with the conventional inside serrated cable tie design causing damage to cable insulations, especially in vibration environments.

The OS range of outside serrated cable ties have overcome these problems. The design offers high tensile strengths, low insertion forces and a smooth surface to the cable insulation - minimising any indentation or damage. The curved shape of the head allows the tie to follow the contours of the cable and takes up less space than other designs of cable ties.



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



The new head design of the OS Series

Application

Designed originally for the automotive market these ties are now being used in many areas where thin-walled or soft insulation wires and cable are being installed, e.g. railways, aircraft, data cable installations and electronics.

Material Data

RoHS

Material	Polyamide 6.6 V0 (PA66V0)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	Limited fire hazard, low generation of toxic gases and corrosive acid, low smoke generation, UL94 V0

HF (halogenfree)

Material Data

RoHS

Material	Polyamide 6.6 UV-Resistant (PA66W)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)

Material Data

RoHS

Material	Polyamide 4.6 (PA46)
Operating Temperature	-40°C to +150°C for 5000 h, (+195°C for 500 h)
Flammability	Limited fire hazard, low generation of toxic gases and corrosive acid, Low smoke generation, UL94 V2

HF (halogenfree)

Material Data

RoHS

Material	Polyamide 6.6 Heat Stabilised (PA66HS)
Operating Temperature	-40°C to +105°C Continuous, (+145°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)

Technical Table

Code	Length (L)	Width (W)	Bundle Ø max.	Bundle Ø max.	Min. Tensile Strength (N)	Material	Colour
Polyamide 6.6 UV Stabilised							
T50SOS	150	4.6	1.6	35	225	PA66W	Black (BK)
T50ROS	200	4.6	1.6	50	225	PA66W	Black (BK)
Polyamide 6.6 Heat Stabilised							
T18ROS	100	2.5	1.6	20	80	PA66HS	Black (BK)
T30ROS	145	3.4	1.6	35	135	PA66HS	Black (BK)
T50SOS	150	4.6	1.6	35	225	PA66HS	Natural (NT)
T50SOS	150	4.6	1.6	35	225	PA66HS	Black (BK)
T30LOS	200	3.4	1.6	50	135	PA66HS	Black (BK)
T50ROS	200	4.6	1.6	50	225	PA66HS	Natural (NT)
T50ROS	200	4.6	1.6	50	225	PA66HS	Black (BK)
T50MOS	245	4.6	1.6	66	225	PA66HS	Black (BK)
T50LOS	384	4.6	1.6	110	225	PA66HS	Black (BK)
Polyamide 6.6 V0 Rated							
T30ROS	145	3.4	1.6	35	135	PA66V0	Natural (NT)
Polyamide 4.6							
T50SOS	150	4.6	1.6	35	225	PA46	Grey (GY)
T50SOS	150	4.6	1.6	35	225	PA46	Grey (GY)
T50MOS	245	4.6	1.6	66	225	PA46	Natural (NT)

All dimensions in mm. Subject to technical changes. Other materials available on request.

For Application Tools please refer to Page 2/10.

Please Note for Product Specific Approvals please refer to Appendix.

RPE Series and PE Series Low Profile Ties

Features and Benefits

These cable ties are 'outside serrated', presenting a smooth surface to the cable bundle. This, combined with the width of the ties, gives a broad contact area with the cable, avoiding any problems with damage to the insulation. The PE/RPE ranges have the benefit of EDF (French Electricity Board) approval. The 'Low Profile' design of the head allows for use in applications with restricted space.

The RPE ties are releasable, reusable allowing for the addition or removal of cables after installation.



RPE, PE Series.

Application

Designed primarily for use within the electrical supply industry these ties are particularly useful in areas with limited space, due to their low profile 'parallel entry' closure. Particularly suitable for outdoor use as they are manufactured from UV-resistant polyamides.

Material Data

Material	Polyamide 6.6 Heat and UV-Stabilised (PA66HSW)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

RoHS

HF (halogenfree)



PE Series



RPE Series

Material Data

Material	Polyamide 6.6 (PA66)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

RoHS

HF (halogenfree)

Technical Table

Code	Length (L)	Width (W)	Bundle Ø max.	Min. Tensile Strength (N)	Material	Colour
PE180	180	9	42	330	PA66HSW	Black (BK)
PE530	535	9	146	445	PA66HSW	Black (BK)
PE180	180	9	42	330	PA66HSW	Black (BK)
PE400	400	9.0	116	445	PA66	Red (RD)
PE400	400	9.0	116	445	PA66	Yellow (YE)
PE400	400	9.0	116	445	PA66	Blue (BU)
PE400	400	9.0	116	445	PA66	Green (GN)
RPE275	275	9	69	445	PA66HSW	Black (BK)
RPE350	350	9	92	445	PA66HSW	Black (BK)

All dimensions in mm. Subject to technical changes.
For Application Tools please refer to Page 2/10.

Please Note for Product Specific Approvals please refer to Appendix.

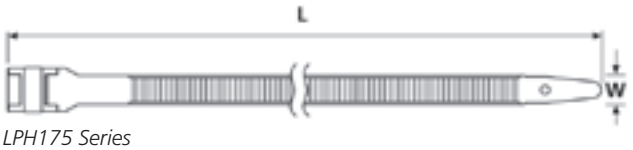
LPH Series Low Profile Ties

Features and Benefits

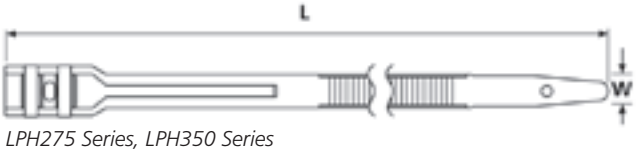
These cable ties are 'outside serrated', presenting a smooth surface to the cable bundle and avoiding any problems with damage to the insulation, the width of the ties gives a broad contact area with the cable, again minimising the risk of damage. The PE/RPE ranges have the benefit of EDF (French Electricity Board) approval. The 'Low Profile' design of the head allows for use in applications with restricted space. The RP ties are releasable and reusable allowing for the addition or removal of cables after installation.

Application

Designed primarily for use within the electrical supply industry, these ties are particularly useful in areas with limited space, e.g. cable bundling in shafts and are particularly suitable for outdoor use as they are manufactured from UV-resistant polyamides.



LPH175 Series



LPH275 Series, LPH350 Series

Material Data

RoHS

Material	Polyamide 6.6 (PA66)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)

Material Data

RoHS

Material	Polyamide 6.6 UV-Resistant (PA66W)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)

Technical Table

Code	Length (L)	Width (W)	Bundle Ø max.	Min. Tensile Strength (N)	Material	Colour
LPH175	175	9	40	310	PA66	Black (BK)
LPH175	175	9	40	310	PA66W	Black (BK)
LPH275	265	9	62	480	PA66	Black (BK)
LPH275	265	9	62	480	PA66W	Black (BK)
LPH350	355	9	92	480	PA66	Black (BK)
LPH350	355	9	92	480	PA66W	Black (BK)

All dimensions in mm. Subject to technical changes.

For Application Tools please refer to Page 2/10.

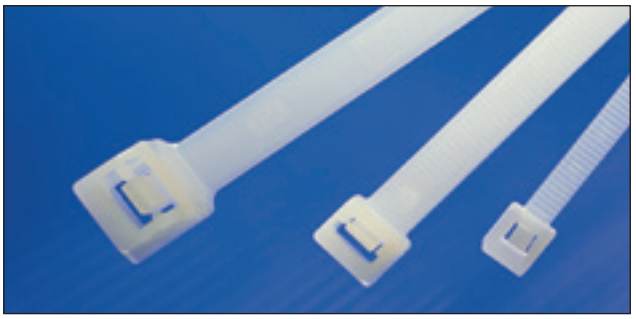
RT, RELK, RLT Series Releasable Cable Ties

Features and Benefits

The extended pawl allows for the quick and simple release of the ties. Manufactured in various grades of PA66 these products are suitable for indoor, outdoor and high temperature applications.

Application

Used in a wide range of industries these releasable and reusable ties are ideal where temporary installation or the addition or removal of cables is required eg. theatres, outdoor events and harness work.



The RT, RELK and RLT cable ties can be easily re-opened and re-used.



RT, RELK, RLT Series Releasable Ties

Material Data

RoHS

Material	Polyamide 6.6 Heat Stabilised (PA66HS)
Operating Temperature	-40°C to +105°C Continuous, (+145°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)

Material Data

RoHS

Material	Polyamide 6.6 UV-Resistant (PA66W)
Operating Temperature	-40 °C to +85 °C Continuous, (+105 °C for 500 h)
Flammability	UL94 V2

HF (halogenfree)

Material Data

RoHS

Material	Polyamide 6.6 (PA66)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)

Technical Table

Code	Length (L)	Width (W)	Bundle Ø max.	Min. Tensile Strength (N)	Material	Colour
RT40R	215	4.0	51	150	PA66	Natural (NT)
RT40R	215	4.0	51	150	PA66	Black (BK)
RT50S	165	4.6	35	225	PA66	Natural (NT)
RT50S	165	4.6	35	225	PA66	Black (BK)
RELK2R	200	4.6	50	200	PA66	Natural (NT)
RELK2R	200	4.6	50	200	PA66	Black (BK)
RELK2M	250	4.6	65	200	PA66	Natural (NT)
RELK2M	250	4.6	65	200	PA66	Black (BK)
RELK2I	300	4.6	81	200	PA66	Natural (NT)
RELK2I	300	4.6	81	200	PA66	Black (BK)
RELK2L	350	4.6	95	200	PA66	Natural (NT)
RELK2L	350	4.6	95	200	PA66	Black (BK)
RLT120	340	7.6	90	535	PA66	Natural (NT)
RLT120	340	7.6	90	535	PA66	Black (BK)
RLT150	770	8.9	225	670	PA66	Natural (NT)
RLT150	770	8.9	225	670	PA66	Black (BK)
RLT150	770	8.9	225	670	PA66W	Black (BK)
RLT150	770	8.9	225	670	PA66HS	Natural (NT)

All dimensions in mm. Subject to technical changes.

For Application Tools please refer to Page 2/10.

Please Note for Product Specific Approvals please refer to Appendix.

REL Series Releasable Ties

Features and Benefits

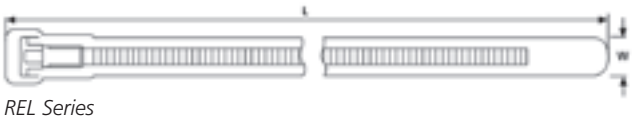
The specially designed unique release mechanism makes this releasable and reusable tie one of the easiest to operate, it can be quickly and simply opened with one hand.

Application

Ideal for use where there is the need to repeatedly open and close the tie – both industrial and commercial applications eg. bundling garden hoses, extension cables and harness manufacture.



The REL series have a simple opening mechanism.



REL Series

Material Data

RoHS

Material	Polyamide 6.6 (PA66)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)

Material Data

RoHS

Material	Polyamide 6.6 UV-Resistant (PA66W)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)

Technical Table

Code	Length (L)	Width (W)	Bundle Ø max.	Min. Tensile Strength (N)	Material	Colour
REL100	100	6.5	21	180	PA66	Natural (NT)
REL140	140	7.5	35	200	PA66	Natural (NT)
REL140	140	7.5	35	200	PA66	Black (BK)
REL140	150	7.6	35	200	PA66W	Black (BK)
REL180	180	6.5	46	150	PA66	Black (BK)
REL250	250	7.6	68	200	PA66	Natural (NT)
REL250	250	7.6	68	200	PA66	Black (BK)
REL250	250	7.5	68	200	PA66W	Black (BK)

All dimensions in mm. Subject to technical changes.

For Application Tools please refer to Page 2/10.

UL Please Note for Product Specific Approvals please refer to Appendix.

REZ Series Releasable Ties

Features and Benefits

The unique, patented head design enables quick and simple use. The tie can be inserted in the normal way and pulled tight or the tail can be twisted into the open part of the head and locked into place. The quick release mechanism can be released by one hand - even when the tie is under tension - by simply pinching the ears.

Application

These releasable and reusable ties are ideal for temporary installations or the addition and/or removal of cables. Suitable for a multitude of uses, such as the packaging industry as a bag closure where access to part of the bag contents may be needed but the bag needs to be resealed (eg. - milk powder in the catering industry).



The REZ ties have a one-hand, simple, release mechanism.



Technical Table

Code	Length (L)	Width (W)	Bundle Ø max.	Min. Tensile Strength (N)	Colour
REZ200	200	4.7	50	135	Black (BK)
REZ300	305	4.7	80	135	Natural (NT)
REZ300	305	4.7	80	135	Black (BK)

All dimensions in mm. Subject to technical changes.

For Application Tools please refer to Page 2/10.

Material Data

RoHS

Material	Polyamide 6.6 (PA66)
Operating Temperature	-40 °C to +85 °C Continuous, (+105 °C for 500 h)
Flammability	UL94 V2

HF (halogenfree)

SRT Series Releasable Ties

Features and Benefits

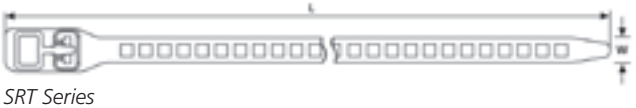
Manufactured from a soft, tear-resistant thermoplastic polyurethane these ties have several unique features: UV and weather resistant, strong yet elastic, and suitable for temperatures as low as -40°C. The SRT ties are releasable and reusable which is ideal for bundling cables in temporary applications such as musical events, theatres and cable harnesses.

Application

The SRT range offers solutions to numerous bundling applications. The soft, flexible material makes these ties particularly suitable for use on data and fibre-optic cables. The elasticity of the material makes them ideal for securing young trees to support poles, and other applications within the gardening and landscaping industry.



The elasticity of the SRT ties makes them suitable for use in many applications.



SRT Series



SRT ties available in small quantities.

Material Data

Material	Thermoplastic Polyurethane (TPU)
Colour	Black (BK)
Operating Temperature	-40°C to +85°C
Flammability	UL94 HB

RoHS

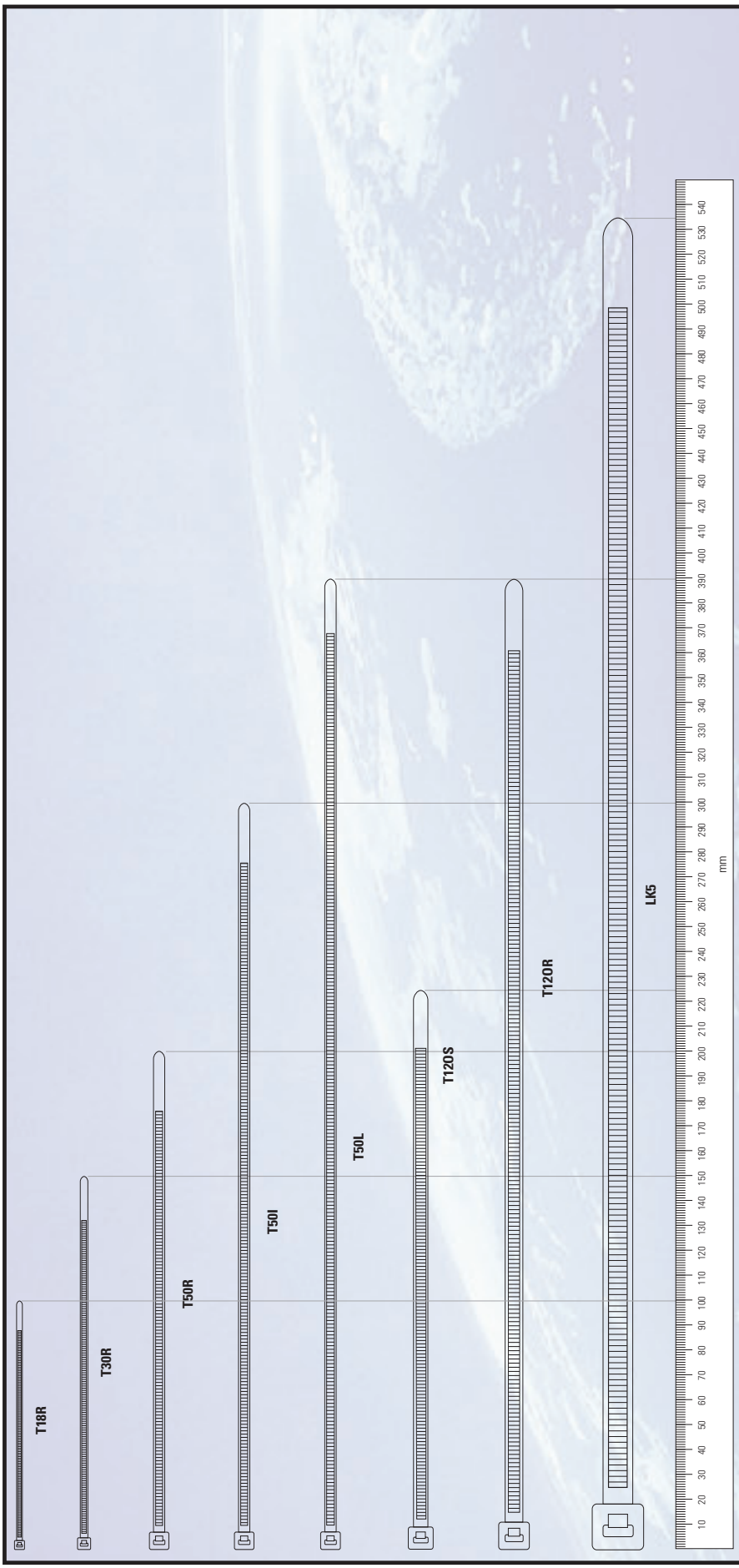
HF (halogenfree)

Technical Table

Code	Length (L)	Width (W)	Bundle Ø max.	Min. Tensile Strength (N)	Pack Cont.
SOFTFIX® XS	180	7	45	57	16
SOFTFIX® S	260	7	79	57	12
SOFTFIX® M	260	11	55	123	8
SOFTFIX® L	340	11	90	123	6
SOFTFIX® XL	580	28	150	360	3
SOFTFIX® XXL	880	28	240	360	2

All dimensions in mm. Subject to technical changes.

Cable Tie Selector

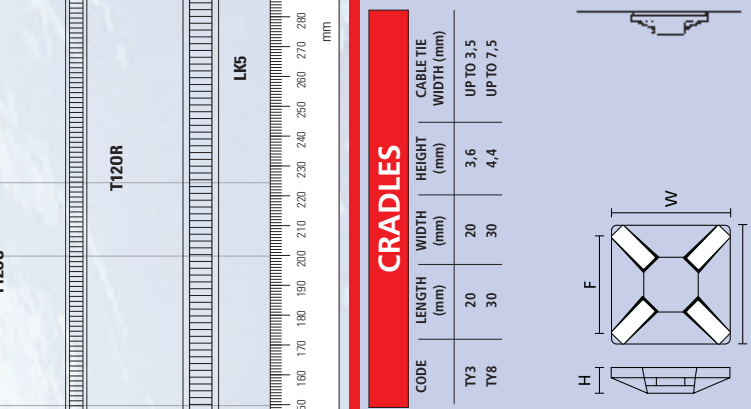


T-SERIES NYLON CABLE TIES

CODE	MIN. TENSILE STRENGTH (N) NYLON	BUNDLE (mm)	LENGTH (mm)	WIDTH (mm)
T18R$	80	22	100	2,5
T30R$	135	35	150	3,5
T50R$	225	50	200	4,6
T50I$	225	85	300	4,6
T50L$	225	110	390	4,6
T120S$	535	55	225	7,6
T120R$	535	105	390	7,6
LK5BK	1115	150	535	13,2

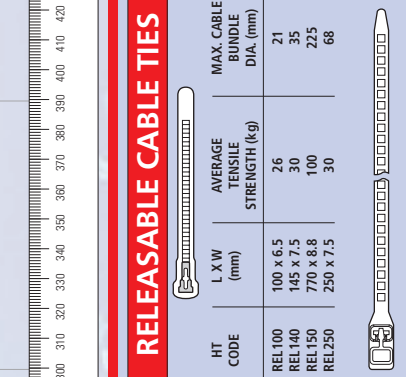
CRADLES

CODE	LENGTH (mm)	WIDTH (mm)	HEIGHT (mm)	CABLE TIE WIDTH (mm)
TY3	20	20	3,6	UP TO 3,5
TY8	30	30	4,4	UP TO 7,5



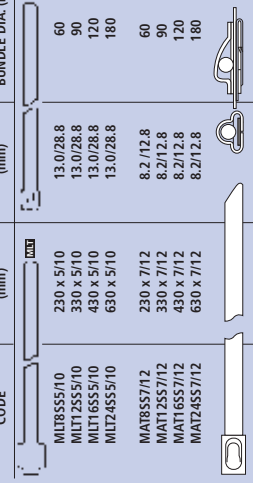
RELEASABLE CABLE TIES

HT CODE	L X W (mm)	AVERAGE TENSILE STRENGTH (kg)	MAX. CABLE BUNDLE DIA. (mm)
REL100	100 x 6.5	26	21
REL140	145 x 7.5	30	35
REL150	770 x 8.8	100	225
REL250	250 x 7.5	30	68



HT CODE	L X W (mm)	MIN. TENSILE STRENGTH (KG)	PACK CONT.
SOFTXXL	880 x 28	35	2
SOFTXL	580 x 28	35	3
SOFTL	340 x 11	12	6
SOFTM	260 x 11	12	8
SOFTS	260 x 7	5	12
SOFTXS	180 x 7	5	16

STAINLESS STEEL CABLE TIES



HT CODE	L X W (mm)	HEAD WIDTH (mm)	MAX. CABLE BUNDLE DIA. (mm)
MLT8SSS/10	230 x 5/10	13.0/28.8	60
MLT12SSS/10	330 x 5/10	13.0/28.8	90
MLT16SSS/10	430 x 5/10	13.0/28.8	120
MLT24SSS/10	630 x 5/10	13.0/28.8	180
MAT8SS7/12	230 x 7/12	8.2 /12.8	60
MAT12SS7/12	330 x 7/12	8.2/12.8	90
MAT16SS7/12	430 x 7/12	8.2/12.8	120
MAT24SS7/12	630 x 7/12	8.2/12.8	180
MBT5S	152 x 4.5		25
MBT8S/8H	200 x 4.5/8		50
MBT14S/14H	360 x 4.5/8		102
MBT20S/20H	520 x 4.5/8		152
MBT27S/27H	680 x 4.5/8		203

PEEK Ties Outside Serrated

Features and Benefits

PEEK Ties will withstand temperatures from -55° C up to +260° C. Their chemical resistance, even against acid and gamma radiation is excellent. Furthermore PEEK Ties have high abrasion resistance. With as little as 4.5mm≤ strap cross-section it holds a tensile strength of 230N but needs only 6N insertion force. The design offers a good ratio weight to tensile strength. The contoured head takes up less space therefore usage in areas with space restrictions are ideal. Due to the outside serration PEEK Ties minimise any indentation or damage to cable insulation.



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

Application

The PEEK Tie has been designed for the Ministry of Defence and Aircraft industry in co-operation with leading companies. With the properties this product claims it is ideal for high temperature applications. This performance is also appropriate for the drilling industry, railway, offshore or automotive industry. The PEEK Tie is an extraordinary product. It combines the mechanical performance and resistance to environmental influence of a metal tie with the ease of use of a polyamide cable tie.



Material Data

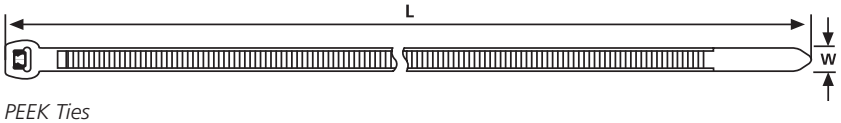
RoHS

Material	Polyetheretherketone (PA66)
Operating Temperature	-55°C to +260°C
Flammability	UL94 V0

LFH (Limited Fire Hazard)



The head design of PEEK Ties



PEEK Ties

Technical Table

Code	Length (L)	Width (W)	Bundle Ø min.	Bundle Ø max.	Min. Tensile Strength (N)	Material	Colour
PT2A	145	3.4	1.6	35.0	230	PEEK	Grey (GY)

All dimensions in mm. Subject to technical changes.

For Application Tools please refer to Page 2/10.

UL Please Note for Product Specific Approvals please refer to Appendix.

TAS Aerial Support Tie

Features and Benefits

Manufactured from halogen-free material the TAS system is suitable for installation in public areas, road or railway tunnels. The built-in spacer makes installation quick and easy, without the need for additional parts. The TAS system is easy to re-open and reuse making it ideal for temporary installations or where there is the need to add or remove cables at a later date.

Application

Designed for use with catenary wire the TAS system is simple to use and an effective method of installing cables. Typical applications are the suspension of cables between buildings, the support of satellite cables and installation of railway signalling cables.

Material Data

RoHS

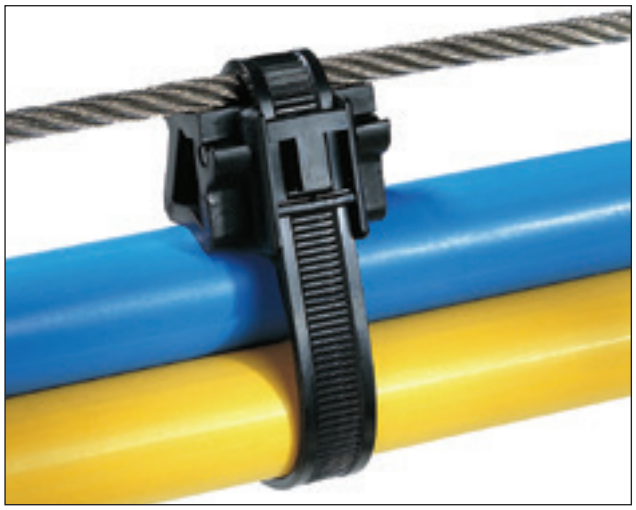
Cable Tie	Polyamide 6.6 high impact modified (PA66HIR)
Colour	Black (BK)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 HB

Material Data

RoHS

Material Spacer	Polypropylene, UV-Resistant (PP)
Colour	Black (BK)
Operating Temperature	-20°C to +85°C
Flammability	UL94 HB

HF (halogenfree)



The TAS-range is used for supporting antenna cables.



Tunnels are a common application.



TAS-Series

Technical Table

Code	Length (L)	Width (W)	Bundle Ø max.	Min. Tensile Strength (N)
TAS100R	210	12.7	45	445
TAS100M	270	12.7	70	445
TAS100L	420	12.7	115	445

All dimensions in mm. Subject to technical changes.

For Application Tools please refer to Page 2/10.

CT and BHT Series of Chassis Ties

Features and Benefits

The ties have serrations on both sides of the strap allowing for quick and easy installation, even where the access or visibility is poor. The B and DE ranges offer a rounded head for applications where a good aesthetic appearance is required. The CT, LHT & SHT ranges have a square head which allows for optimum use in areas with restricted space. Prior to final tensioning these ties can be used as 'releasable' ties for the addition of extra cables. Once the cable runs are complete the final tensioning (by use of a suitable HellermannTyton tensioning tool) locks the tie in place.

Application

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



BHT375 - used for mounting cables via a single hole.

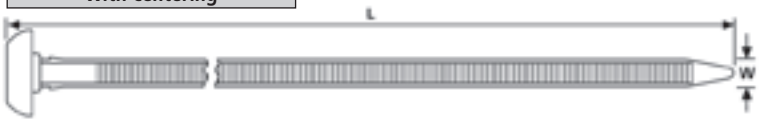
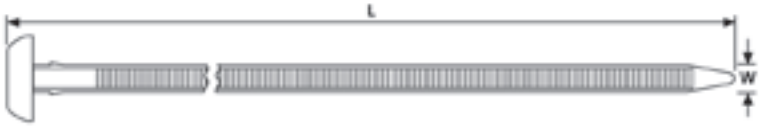
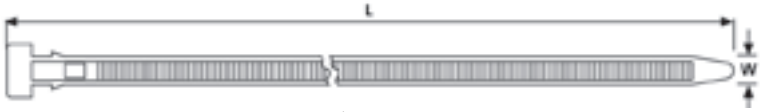
Material Data

Material	Polyamide 6.6 heat stabilised (PA66HS)
Colour	Black (BK)
Operating Temperature	-40°C to +105°C Continuous, (+145°C for 500 h)
Flammability	UL94 V2

RoHS

HF (halogenfree)

Technical Table

Code	Length (L)	Width (W)	Bundle Ø max.	Min. Tensile Strength (N)	Material	Colour
With centering						
						
BHT203	200	7.6	50	700	PA66HS	Black (BK)
BHT375	375	7.6	100	700	PA66HS	Black (BK)
Without centering						
						
BHT203M	200	7.6	50	700	PA66HS	Black (BK)
BHT375M	375	7.6	100	700	PA66HS	Black (BK)
						
CT203	200	7.6	50	700	PA66	Black (BK)
CT203	200	7.6	50	700	PA66HS	Black (BK)
CT203	200	7.6	50	700	PA66W	Black (BK)
CT375	375	7.6	100	700	PA66	Black (BK)
CT375	375	7.6	100	700	PA66HS	Black (BK)
CT375	375	7.6	100	700	PA66W	Black (BK)
LHT370	370	7.6	106	535	PA66	Black (BK)
DE863220	300	6	80	135	PA66HS	Black (BK)

All dimensions in mm. Subject to technical changes.

For Application Tools please refer to Page 2/10.

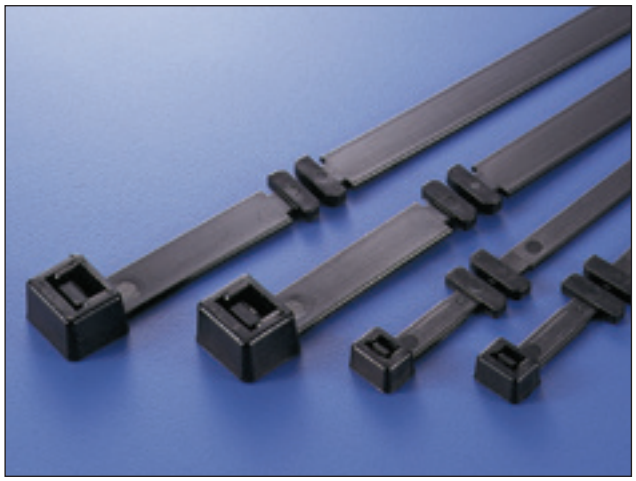
CTF Fixing Ties for Cable Tray

Features and Benefits

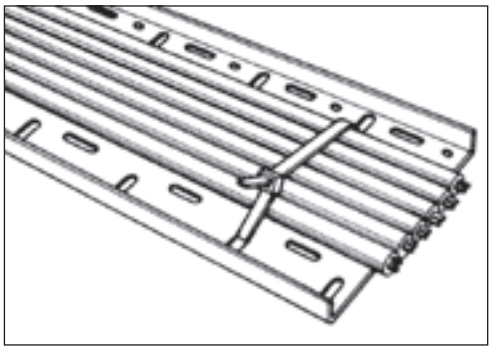
The CTF cable tie has been designed to be used exclusively with both UK and European styles of cable tray. Offering a more secure fixing that is also easier to install.

Application

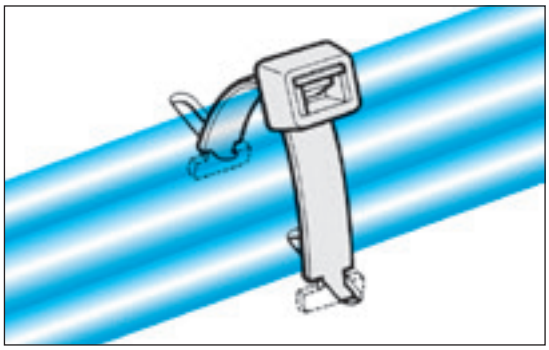
The CTF Fixing Ties are designed specifically for use with cable tray.



CTF range of cable ties.



Cable tray ties in application.



Cable tray ties in application.

Material Data

Material	Polyamide 6.6 (PA66)
Colour	Black (BK), Natural (NT)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

RoHS

HF (halogenfree)

Technical Table

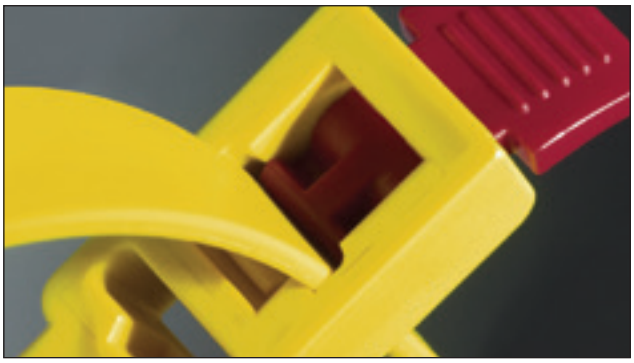
Code	Length (L)	Width (W)	Min. Tensile Strength (N)	Material	Colour
CTF120	320.0	7.6	535	PA66	Black (BK)
CTF120	320.0	7.6	535	PA66	Natural (NT)
CTF12090*	320.0	7.6	535	PA66	Black (BK)
CTF12090*	320.0	7.6	535	PA66	Natural (NT)
CTF250	355.0	13.0	1115	PA66	Black (BK)
CTF250	355.0	13.0	1115	PA66	Natural (NT)

All dimensions in mm. Subject to technical changes.

SpeedyTie®

Features and Benefits

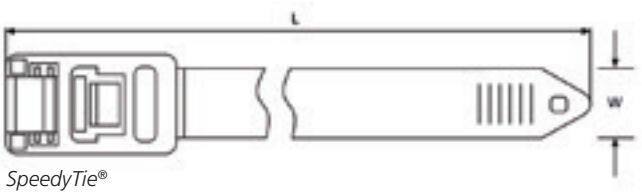
The SpeedyTie® can be used many times because of its removable, patented trigger. Also this is a heavy duty releasable tie that can bear loads of up to 888N (200lbs). With a length of 750mm it suits a wide variety of applications and is easy to handle even when wearing work gloves. Any excess tail can be easily 'tucked away' in a second slot on the head. These ties are available in 'high visibility' yellow and in weatherproof black.



Patented quick release mechanism for quick and easy application.

Application

The versatility of the SpeedyTie® means that it is suitable for a multitude of applications. Originally developed for the 'offshore' industries, other uses include construction, electrical installations, scaffolding sheet installations, exhibitions, trade fairs, and many more.



SpeedyTie®



SpeedyTie® - Quick and easy.



Excess tails can be neatly tucked away.



SpeedyTie® is particularly suited for temporary but safe bundling or fixing.

Material Data

RoHS

Material	Polyamide 6.6 (PA66)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)

Material Data

RoHS

Material	Polyamide 6.6 high impact modified scan black (PA66HIR(S))
Colour	Black (BK)
Operating Temperature	-40°C to +80°C Continuous, (+105°C for 500 h)
Flammability	UL94 HB

HF (halogenfree)

Technical Table

Code	Length (L)	Width (W)	Bundle Ø max.	Min. Tensile Strength (N)	Colour	Material	Pack Cont.
RTT750HR	750	13	210	888	Yellow (YL), Red (RD)	PA66	25
RTT750HR	750	13	210	888	Yellow (YL), Red (RD)	PA66	5
RTT750HR	750	13	210	888	Black (BK), Black (BK)	PA66HIR(S)	5

All dimensions in mm. Subject to technical changes.

Metal Content Tie MCT50L

HACCP (Hazard Analysis of Critical Control Points) is a directive of the EU, developed by the Codex Alimentarious of the World Health Organisation. This demands that effective food safety systems are established through the application of systematic approaches to hazard and risk analysis.

Features and Benefits

The MCT50L ties have metal content dispersed throughout the head and strap of the cable tie. These ties can be used as part of the HACCP process. The 'unique' blue colour assists in the visual detection and greatly reduces the risk of contamination.

Application

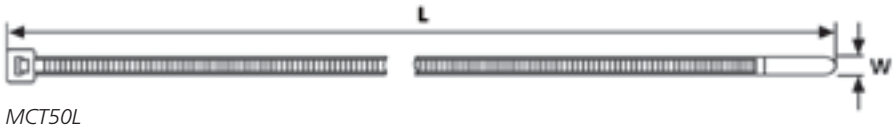
The Metal Content Tie is a cable tie specifically designed for use in the food & pharmaceutical processing industries. A unique manufacturing process, involving the inclusion of a metallic pigment, enables even small 'cut-off' sections of the tie to be detected by standard metal detecting equipment. Ideally suited for the installation of cabling in and around the manufacturing process.



The MCT50L with metal content.



A safe and contamination free production process with MCT50L.



MCT50L

Technical Table

Code	Length (L)	Width (W)	Bundle Ø max.	Min. Tensile Strength (N)
MCT50L	390	4.6	110	225

For Application Tools please refer to Page 2/10.

Material Data

Material	Polyamide 6.6 with 10% metal particles (PA66MP10%)
Colour	Blue (BL)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)

RoHS

HF (halogenfree)

* HACCP = Hazard Analysis Critical Control Points
HACCP stands for Hazard Analysis Critical Control Points. It is a method of identifying and eliminating potential hazards in food production. Those hazards that cannot be eliminated are controlled in such a way that the consumer is protected.
These controls are known as Critical Control Points (CCPs). They are CRITICAL because if they fail or are not carried out, the risk of the product harming the customer, increases.

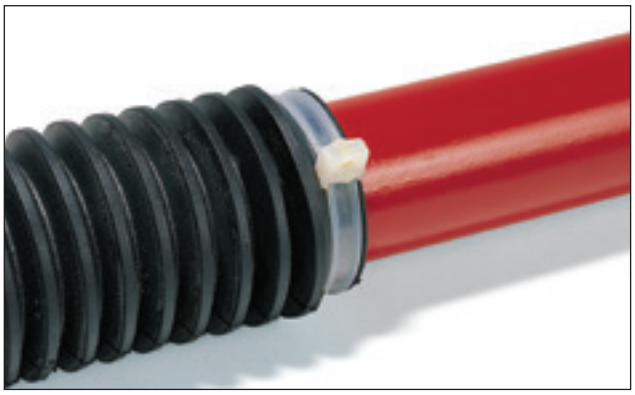
KR Series Cable and Hose Fixing System

Features and Benefits

The special curved design of the head ensures a seal around the full circumference of the hose/pipe. The patented design offers a smooth strap which is locked into place with a glass fibre reinforced pin, and when assembled the tie offers a very secure and vibration resistant fixing. Available as both fixed length ties or in a continuous roll (50 metres).

Application

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



The KR8/33 has been repeatedly proven in high vibration applications.



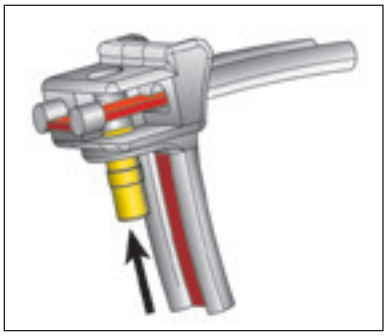
Cable ties KR-Series

Material Data

RoHS

Material	Polyamide 6.6 (PA66)
Colour	Natural (NT), Black (BK)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)



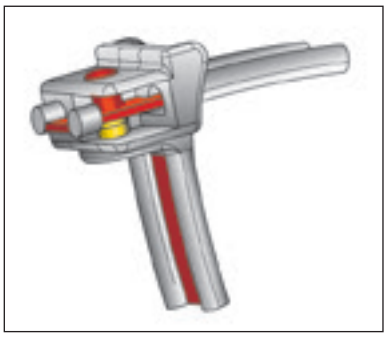
The unlocked head of a KR-tie.

Material Data

RoHS

Material	Polyamide 6.6 heat stabilised (PA66HS)
Colour	Natural (NT), Black (BK)
Operating Temperature	-40°C to +105°C Continuous, (+145°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)



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

Material Data

RoHS

Material	Polyamide 6.6 UV-Resistant (PA66W)
Colour	Black (BK)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)

Technical Table

Code	Length (L)	Width (W)	Bundle Ø max.	Min. Tensile Strength (N)	Material	Colour	Application Tool
KR6/18	183	6	39	490	PA66	Natural (NT)	KR6/8
KR6/18	183	6	39	490	PA66W	Black (BK)	KR6/8
KR6/35	356	6	93	490	PA66	Natural (NT)	KR6/8
KR6/35	356	6	93	490	PA66	Black (BK)	KR6/8

All dimensions in mm. Subject to technical changes.

Material Data

RoHS

Material	Polyamide 4.6 (PA46)
Colour	Grey (GY)
Operating Temperature	-40°C to +150°C for 5000 h, (+195°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)



Technical Table

Code	Length (L)	Width (W)	Bundle Ø max.	Min. Tensile Strength (N)	Material	Colour	Application Tool
KR8/43	426	8	105	785	PA66HS	Natural (NT)	KR6/8, KR8PNSE
KR8/21	210	8	47	785	PA66	Natural (NT)	KR6/8, KR8PNSE
KR8/33	337	8	86	785	PA66W	Black (BK)	KR6/8, KR8PNSE
KR8/33	337	8	86	785	PA46	Grey (GY)	KR6/8, KR8PNSE

All dimensions in mm. Subject to technical changes.

Please Note for Product Specific Approvals please refer to Appendix.

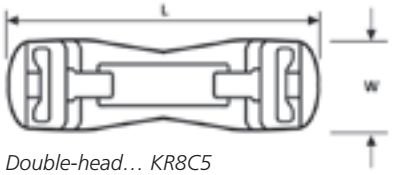
Technical Table

Code	Length (L)	Width (W)	Bundle Ø max.	Min. Tensile Strength (N)	Material	Colour	Application Tool
KRB ultrasonic welded							
KR8/50	500	8	152	785	PA66	Natural (NT)	KR6/8, KR8PNSE
KR8/60	600	8	184	785	PA66W	Black (BK)	KR6/8, KR8PNSE
KR8/70	700	8	216	785	PA66W	Black (BK)	KR6/8, KR8PNSE
KR8/80	800	8	248	785	PA66W	Black (BK)	KR6/8, KR8PNSE
KR8/100	1000	8	300	785	PA66W	Black (BK)	KR6/8, KR8PNSE
KR8/110	1100	8	344	785	PA66W	Black (BK)	KR6/8, KR8PNSE
KR8/120	1200	8	375	785	PA66	Natural (NT)	KR6/8, KR8PNSE
KR8/150	1500	8	471	785	PA66	Natural (NT)	KR6/8, KR8PNSE

All dimensions in mm. Subject to technical changes.



Cable ties... KR8S1



Double-head... KR8C5

Technical Table

Code	Length (L)	Width (W)	Bundle Ø max.	Min. Tensile Strength (N)	Material	Colour	Application Tool
KR8C5							
KR8/C5	–	–	–	–	PA66	Black (BK)	KR6/8
KR8S1							
KR8/S1	50 m	8	–	785	PA66	Black (BK)	KR6/8

All dimensions in mm. Subject to technical changes.

EL-TY Continuous Cable Tie

Features and Benefits

Manufactured from very strong Acetal (POM) the system consists of a continuous strap, spacers, and heads (which have stainless steel pawls). Once applied the tie offers a very secure fixing and offers good resistance to ageing and sunlight.

The flexibility of the system allows for minimal stock holding of components as the system can be used to suit any bundle diameter.

Application

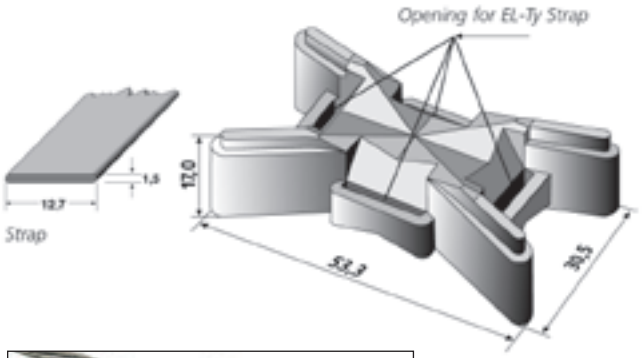
These robust cable ties are particularly suitable for use with larger diameter cables, pipes and hoses. Designed originally for securing overhead, catenary cables (when used with the spacers) they are now used in many industries from the building sector, through the chemical industry to the installation of signs for traffic management.

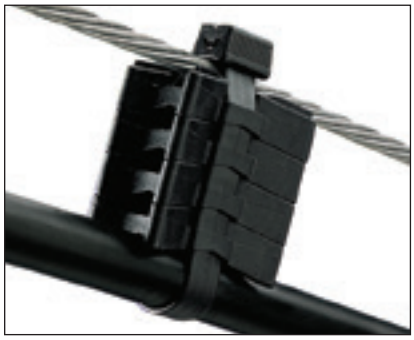


The EL-Ty can be cut to suit any bundle.



Head (Front View) *Head (Side View)* *Head (Front View)*





Spacer.

Material Data

Material Head	Polyacetal (POM) with stainless steel pawl UV-resistant
Cable Tie	Polyacetal (POM), UV-weather resistant
Material Spacer	Polypropylene, UV-resistant (PP)
Colour	Black (BK)
Operating Temperature	-40°C to +85°C
Flammability	UL94 HB

RoHS

HF (halogenfree)

Technical Table

Code	Min. Tensile Strength (N)	Pack Cont.	Material	Colour	Application Tool
TELS1	1111	15m strap, 30 heads	POM	Black (BK)	MK9HT
TELSH	1111	25	POM	Black (BK)	MK9HT
TELS-SPK2	–	50	PP	Black (BK)	-

All dimensions in mm. Subject to technical changes.

Hook and Loop Ties

TEXTIE-Series

As cables use thinner and softer insulation, and as fibre optic cables become more common, there is a need for a 'soft' method of bundling. TEXTIEs are ideal for use on telephone cables, optical fibre and network cables. In addition, they are perfect for use in temporary installations such as theatre stage construction or the manufacture of prototype cable harnesses. TEXTIEs can also be used in many domestic and office applications, too.

Features and Benefits

- Quick and simple to use without tools.
- No waste.
- Resistant to ageing with no corrosion.
- Re-usable up to 400 times.
- Various colours for easy identification of multiple cable runs.



Due to the wide variety of colours available 'One Wrap' ties make cable identification simple.



One Wrap Series



Material Data

Material Loop	Polyamide (PA)
Material Hook	Polyethylene (PE)
Operating Temperature	-20°C to +75°C

RoHS

HF (halogenfree)

Technical Table

TYPE	Width (W)	Length (L)	Bundle Ø max.	Material Loop	Material Hook	Colour	Pack Cont.	Article-No.
TEXTIE S	12.5	150.0	45.0	Polyamide (PA)	Polypropylene (PP)	Black (BK)	10	130-00012
TEXTIE M	12.5	200.0	60.0	Polyamide (PA)	Polypropylene (PP)	Black (BK)	10	130-00013
	12.5	200.0	60.0	Polyamide (PA)	Polypropylene (PP)	Blue (BU)	10	130-00018
	12.5	200.0	60.0	Polyamide (PA)	Polypropylene (PP)	Green (GN)	10	130-00017
	12.5	200.0	60.0	Polyamide (PA)	Polypropylene (PP)	Red (RD)	10	130-00014
	12.5	200.0	60.0	Polyamide (PA)	Polypropylene (PP)	White (WH)	10	130-00021
	12.5	200.0	60.0	Polyamide (PA)	Polypropylene (PP)	Yellow (YE)	10	130-00016
TEXTIE L	12.5	330.0	100.0	Polyamide (PA)	Polypropylene (PP)	Black (BK)	10	130-00019
TEXTIE 5M	12.5	5,000.0	-	Polyamide (PA)	Polypropylene (PP)	Black (BK)	1	130-00020
TEXTIE 25M	13.0	25,000.0	-	Polyamide (PA)	Polypropylene (PP)	Black (BK)	1	130-00022

All dimensions in mm. Subject to technical changes.

Special lengths, diameters, colours and printing available on request.

LFPC Protective Channel

Features and Benefits

Manufactured from pPolyolefin the LFPC channel is a halogen free material which is flame retardant. Covering the underside and edges of the MBT ties to give full protection to the cable bundle.

Application

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

Technical Table

Code	Length (L)	Width (W)
LFPC70	MBTS	7.0
LFPC103	MBTH	10.3
LFPC150	MBTXH	15.0
LFPC83	–	8.3
LFPC129	–	12.9
LFPC132	–	13.2

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

DEF STAN Please Note for Product Specific Approvals please refer to Appendix.



Cable tie MBTXH with LFPC Protective Channel.



LFPC

All dimensions in mm. Subject to technical changes.

Material Data

Material	Polyolefin compound unlinked (PO)
Colour	Black (BK)
Operating Temperature	-40°C to +90°C
Flammability	Limited fire hazard, low generation of toxic gases and corrosive acid, low smoke generation
Specification	London Underground RSE STD 013, DEF STAN 61-12 (Part 31)

RoHS

LFH (Limited Fire Hazard)

Properties of 304/316 steel (similar to V2A/V4A steel)

Stainless Steel Cable Ties, M Series

Material	Chem. Material Properties	Mech. material properties	Operating Temperature	Colour
Stainless Steel Type SS304 RoHS	Outstanding chemical resistance Corrosion resistant Weather resistant Antimagnetic Resistant to a large number of aggressive chemicals	Tensile strength (N/mm²): 530 – 680 Max. degree of hardness (VPN) 190	-80°C to +538°C	Metal
Stainless Steel Type SS316 RoHS	Outstanding chemical resistance Corrosion resistant Weather resistant Antimagnetic Also resistant to aggressive chemicals, e.g. industrial vapours, seawater, salt spray in onshore and offshore areas, inorganic acids, hydrochloric acid and halogen salts	Tensile strength (N/mm²): 540 – 750 Max. degree of hardness (VPN) 205	-80°C to +538°C	Metal

VPN = unit of measurement for degree of hardness according to Vickers

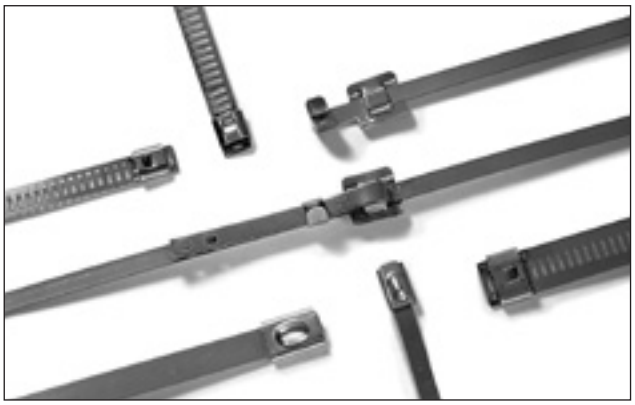
MBT Range of Stainless Steel Cable Ties

Features and Benefits

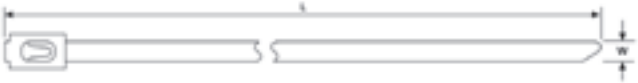
The MBT (Metal Ball-bearing Ties) have a non-releasable locking mechanism that offers infinite adjustment along the length of the tie. These ties are available in both 316 and 304 grades of stainless steel.

Application

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



Stainless steel cable ties can be used at temperatures up to 538ºC.



MBTS, MBTH

Technical Table

Code	Length (L)	Width (W)	Bundle Ø max.	Min. Tensile Strength (N)	Material
Material Type SS304					
MBT5SS	127	4.6	25	670	SS304
MBT8SS	201	4.6	50	670	SS304
MBT14SS	362	4.6	102	670	SS304
MBT20SS	521	4.6	152	670	SS304
MBT27SS	681	4.6	203	670	SS304
MBT8HS	201	7.9	50	1115	SS304
MBT14HS	362	7.9	102	1115	SS304
MBT20HS	521	7.9	152	1115	SS304
MBT27HS	681	7.9	203	1115	SS304
MBT33HS	838	7.9	254	1115	SS304
MBT14XHS	362	12.3	107	2225	SS304
MBT20XHS	362	12.3	107	2225	SS304
MBT27XHS	681	12.3	203	2225	SS304
MBT33XHS	838	12.3	254	2225	SS304
Material Type SS316					
MBT5S	127	4.6	25	670	SS316
MBT8S	201	4.6	50	670	SS316
MBT14S	362	4.6	102	670	SS316
MBT20S	521	4.6	152	670	SS316
MBT27S	681	4.6	203	670	SS316
MBT33S	838	4.6	254	670	SS316
MBT8H	201	7.9	50.8	1115	SS316
MBT14H	362	7.9	102	1115	SS316
MBT20H	521	7.9	152	1115	SS316
MBT27H	681	7.9	203	1115	SS316
MBT33H	838	7.9	254	1115	SS316
MBT14XH	362	12.3	102	2225	SS316
MBT20XH	521	12.3	152	2225	SS316
MBT27XH	681	12.3	203	2225	SS316
MBT33XH	838	12.3	254	2225	SS316

All dimensions in mm. Subject to technical changes.

For Application Tools please refer to Page 2/10.

Please Note for Product Specific Approvals please refer to Appendix.



MBTXH

Technical Table

Code	Length (L)	Width (W)	Bundle Ø max.	Min. Tensile Strength (N)	Material
MBT coated on one side					
MBT5SC	127	4.6	25	670	SS316, SP
MBT8SC	201	4.6	50	670	SS316, SP
MBT14SC	362	4.6	102	670	SS316, SP
MBT20SC	521	4.6	152	670	SS316, SP
MBT27SC	681	4.6	203	670	SS316, SP
MBT33SC	838	4.6	254	670	SS316, SP
MBT8HC	201	7.9	50	1115	SS316, SP
MBT14HC	362	7.9	102	1115	SS316, SP
MBT20HC	521	7.9	152	1115	SS316, SP
MBT27HC	681	7.9	203	1115	SS316, SP
MBT33HC	838	7.9	254	1115	SS316, SP
MBT14XHC	362	12.3	107	2225	SS316, SP
MBT20XHC	521	12.3	150	2225	SS316, SP
MBT27XHC	681	12.3	203	2225	SS316, SP
MBT33XHC	838	12.3	254	2225	SS316, SP
MBT Fully Coated					
MBT5SFC	127	4.6	25	670	SS316, SP
MBT8SFC	201	4.6	50	670	SS316, SP
MBT14SFC	362	4.6	102	670	SS316, SP
MBT20SFC	521	4.6	152	670	SS316, SP
MBT27SFC	681	4.6	203	670	SS316, SP
MBT33SFC	838	4.6	254	670	SS316, SP
MBT8HFC	201	7.9	50	1115	SS316, SP
MBT14HFC	362	7.9	102	1115	SS316, SP
MBT20HFC	521	7.9	152	1115	SS316, SP
MBT27HFC	681	7.9	203	1115	SS316, SP
MBT33HFC	838	7.9	254	1115	SS316, SP
MBT14XHFC	362	12.3	107	2225	SS316, SP
MBT20XHFC	521	12.3	150	2225	SS316, SP
MBT27XHFC	681	12.3	203	2225	SS316, SP
MBT33XHFC	838	12.3	254	2225	SS316, SP

All dimensions in mm. Subject to technical changes.

For Application Tools please refer to Page 2/10.

MBT coated with Polyamide11 (N11) and MAT coated with Polyester (SP) are available on request.

MAT and MLT Range of Stainless Steel Cable Ties

Features and Benefits

The MAT range of stainless steel cable ties can be used in the most arduous of conditions or where the additional security, strength and fire resistance of a metal fixing is required. Type MAT cable ties are cable ties which can be put on in stages (locking in the strip). The MLT series can be tightened smoothly and are locked by folding over the strip and the bar in the head area. This produces a solid and permanent bundling.

MBT coated with Polyamide11 (N11) and MAT coated with Polyester (SP) are available on request.

Technical Table

Code	Length (L)	Width (W)	Bundle Ø max.	Material	Application Tool
MBT coated on one side					
MLT8SS5	230	5	60	SS316	MTT4, MTT6
MLT12SS5	330	5	90	SS316	MTT4, MTT6
MLT16SS5	430	5	120	SS316	MTT4, MTT6
MLT24SS5	630	5	180	SS316	MTT4, MTT6
MLT8SS10	230	10	60	SS316	MTT4, MTT6
MLT12SS10	330	10	90	SS316	MTT4, MTT6
MLT16SS10	430	10	120	SS316	MTT4, MTT6
MLT24SS10	630	10	180	SS316	MTT4, MTT6
MBT Fully Coated					
MLT8SSC5	230	5.26	60	SS316, SP	MTT4, MTT6
MLT12SSC5	330	5.26	90	SS316, SP	MTT4, MTT6
MLT16SSC5	430	5.26	120	SS316, SP	MTT4, MTT6
MLT24SSC5	630	5.26	180	SS316, SP	MTT4, MTT6
MLT12SSC10	330	10.26	90	SS316, SP	MTT4, MTT6
MLT16SSC10	430	10.26	120	SS316, SP	MTT4, MTT6
MLT24SSC10	630	10.26	180	SS316, SP	MTT4, MTT6

All dimensions in mm. Subject to technical changes.

Technical Table

Code	Length (L)	Width (W)	Bundle Ø max.	Min. Tensile Strength (N)	Material
MAT					
MAT8SS7	230	7.0	60	445	SS316
MAT12SS7	330	7.0	90	445	SS316
MAT16SS7	430	7.0	120	445	SS316
MAT24SS7	630	7.0	180	445	SS316
MAT8SS12	230	12.0	60	445	SS316
MAT12SS12	330	12.0	90	445	SS316
MAT16SS12	430	12.0	120	445	SS316
MAT24SS12	630	11.7	180	670	SS316

All dimensions in mm. Subject to technical changes.

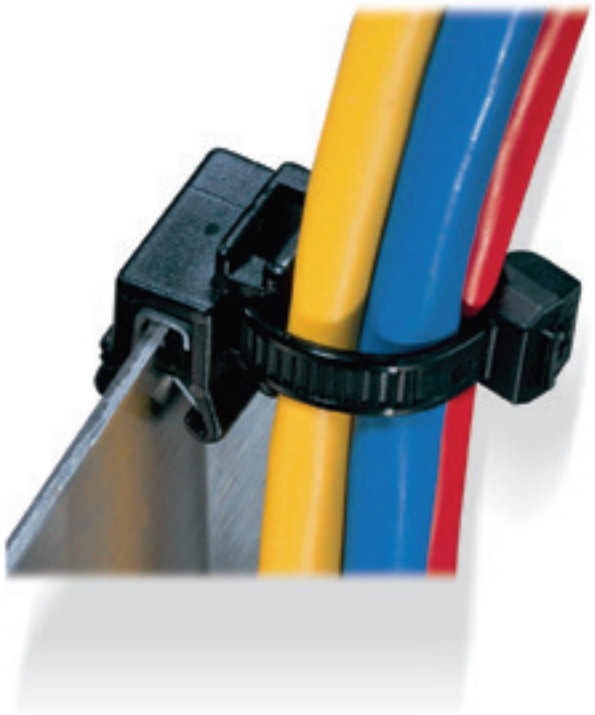
For Application Tools please refer to Page 2/10.

Please Note for Product Specific Approvals please refer to Appendix.

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Fixing Ties

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One Piece Fixing Ties

One Piece Fixing Ties bring together a solution for the need to bundle a product whilst at the same time providing a fixing solution. HellermannTyton's one-piece fixing ties offer the ideal combination of high specification materials and superior design to give the perfect solution for both bundling and installation of cable bundles, hoses or pipes. Long acknowledged as the market leader for innovative fixings, HellermannTyton has now met some of the challenges set by the automotive, aviation, domestic appliance and electrical industries by combining the best of 'fixing design' with the best of 'cable tie design' – The 'All-New One Piece Ties'.



The additional seal protects against the ingress of moisture or dirt.

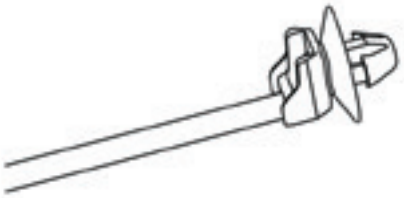


Application in aviation industry.

T50SOSSFT6.5E (without foam washer)

T50SOSSFT6.5E-MD (with foam washer)

This tie has an arrowhead design of fixing which offers a positive 'click' low push-in force with a high pull-out force. When combined with the optional foam rubber seal it offers additional protection against the ingress of moisture or dirt.



T50SOSSFT6.5E

Material Data

RoHS

Material	Polyamide 6.6 heat stabilised (PA66HS)
Operating Temperature	-40°C to +105°C Continuous, (+145°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)

Material Data

RoHS

Material	Polyamide 6.6 high impact mModified, Heat Stabilised (PA66HIRHS)
Operating Temperature	-40°C to +105°C Continuous, (+145°C for 500 h)
Flammability	UL94 HB

Technical Table

Code	Length (L)	Width (W)	Bundle Ø max.	Min. Tensile Strength (N)	Hole Ø	Panel Thickness max.	Panel Thickness max.	Material	Colour
T50SOSSFT6.5E-MD	160	4.6	35	225	6.3-6.7	0.6	1.8	PA66HS	Green (GR)
T50SOSSFT6.5E	160	4.6	35	225	6.3-6.7	1.9	2.5	PA66HS	Black (BK)

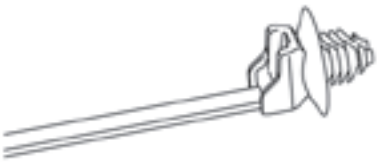
All dimensions in mm. Subject to technical changes.

T50SOSFT6E

This fir tree fixing tie provides a low insertion force with a high pull-out force. The outside serrations present a smooth surface to the cables, preventing the chafe and damage to the insulation that can often be seen with the use of inside serrated cable ties in vibration environments. The unique head design allows the cable tie to firmly hold cables as small as 1.6mm diameter.



Application in automotive industries.



T50SOSFT6E

Technical Table

Code	Length (L)	Width (W)	Bundle Ø max.	Min. Tensile Strength (N)	Hole Ø	Panel Thickness min.	Panel Thickness max.	Material	Colour
T50SOSFT6E	160	4.6	35	225	6.5-7.0	0.75	3.0	PA66HIRHS	Black (BK)

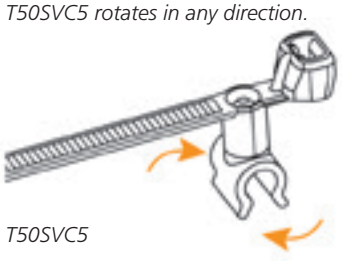
All dimensions in mm. Subject to technical changes.

T50SVC5

This simple-to-use inside serrated tie provides the opportunity to attach an additional 5mm diameter cable, pipe or hose to an existing bundle. Offering the facility of a full 360° of rotation, the second bundle can be orientated in any direction in relation to the main harness. Ideally suited for any application where the cable, pipe or hose can move in relation to the fixing point.



T50SVC5 rotates in any direction.



T50SVC5

Technical Table

Code	Length (L)	Width (W)	Bundle Ø max.	Min. Tensile Strength (N)	Attach to Ø	Material	Colour
T50SVC5	155	4.7	35	225	4.5 - 5.2	PA66HS	Black (BK)

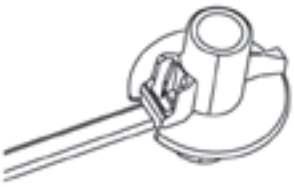
All dimensions in mm. Subject to technical changes.

T50SOSSBH5E

This cable tie offers three distinct benefits to the user. Firstly it offers the opportunity to retain insulation material. Secondly, it allows cables, pipes or hoses to be bundled. Thirdly it has a simple 'soft push' mechanism which allows it to be installed onto a weld stud without the use of any tools. The unique head design allows the cable tie to firmly hold bundles as small as 1.6mm diameter.



The new head design offers additional fixing of soft materials.



T50SOSSBH5E

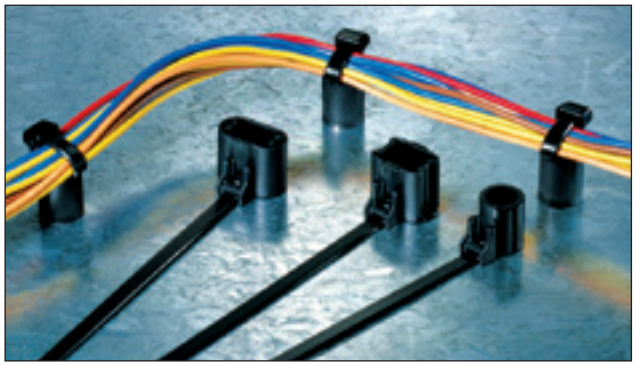
Technical Table

Code	Length (L)	Width (W)	Bundle Ø max.	Min. Tensile Strength (N)	Stud Ø	Panel Thickness min.	Panel Thickness max.	Material	Colour
T50SOSSBH5E	165	4.6	35	225	5	-	-	PA66HS	Black (BK)

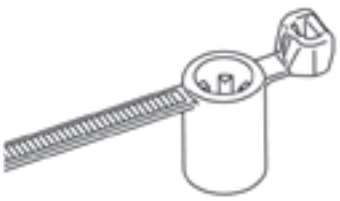
All dimensions in mm. Subject to technical changes.

T50SSBS50TE

Using the 'soft push' technology, this inside serrated tie is mounted on the top of the stud. The additional height gained by this design gives a clear "stand off" from the panel. Ideal applications include mass transit industries, panel builders, and white goods manufacturers.



The T50SSBS50TE allows very precise routing of cable bundles.



T50SSBS50TE

Technical Table

Code	Length (L)	Width (W)	Bundle Ø max.	Min. Tensile Strength (N)	Stud Ø	Panel Thickness min.	Panel Thickness max.	Material	Colour
T50SSBS50TE*	165	4.6	35	200	5	-	-	PA66HS	Black (BK)

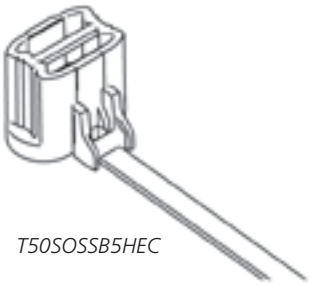
All dimensions in mm. Subject to technical changes.

* Since the bundled cables lie directly above or on the weld stud, care must be taken to ensure that the length of the weld stud does not exceed the height of the sheath. To avoid damage, we recommend a maximum weld stud length of 16.5mm.

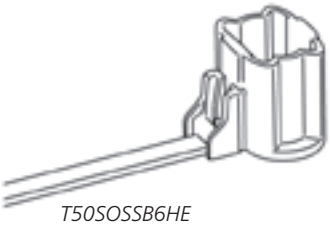
T50SOSSB5HEC

T50SOSSB6 High E

The special oval shape of the fixing on this stud mounted fixing tie provides a 5-6mm lateral adjustment to cater for any misalignment of the stud or incorrect positioning of the tie on the cables. The simple 'soft push' mechanism allows for easier installation onto a weld stud without the use of any tools.



T50SOSSB5HEC



T50SOSSB6HE

T50SOSSBS5E

Providing an especially strong fixing method, the design of this fixing tie offers the 'soft push' mounting technology with the ability to mount the cables very close to the fixing stud. The outside serrations present a smooth surface to the cables preventing chafe and damage to the insulation, especially in mass transit applications.

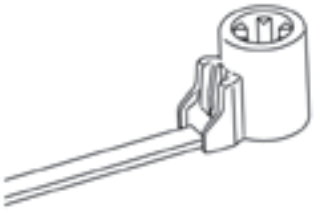


This outside serrated cable tie with weld stud mounting keeps the cables close to the fixing stud.

Technical Table

Code	Length (L)	Width (W)	Bundle Ø max.	Min. Tensile Strength (N)	Stud Ø	Material	Colour
T50SOSSB5HEC	160	4.6	35	170	5	PA66HS	Black (BK)
T50SOSSB6HE	160	4.6	35	170	6	PA66HS	Black (BK)
T50SOSSBS5E	160	4.6	35	225	5	PA66HS	Black (BK)
T50SOSSB5-HIGH-E	160	4.6	35	225	5	PA66HS	Black (BK)
T50SOSWSP5E	163	4.6	35	200	5	PA66HS	Black (BK)

All dimensions in mm. Subject to technical changes.



T50SOSSBS5E

T50SOSWSP5E

The unique shape of the head on this fixing tie provides a 5-6mm lateral adjustment to cater for any misalignment of the stud or incorrect positioning of the tie on the cables. The low profile of the fixing allows for several ties to be installed one on top of the other on the same stud, to accommodate different cable routings. This is both space saving and versatile.



T50SOSWSP5E, parallel installation using two fixing ties.



T50SOSWSP5E

One Piece Fixing Ties with Arrowhead

Features and Benefits

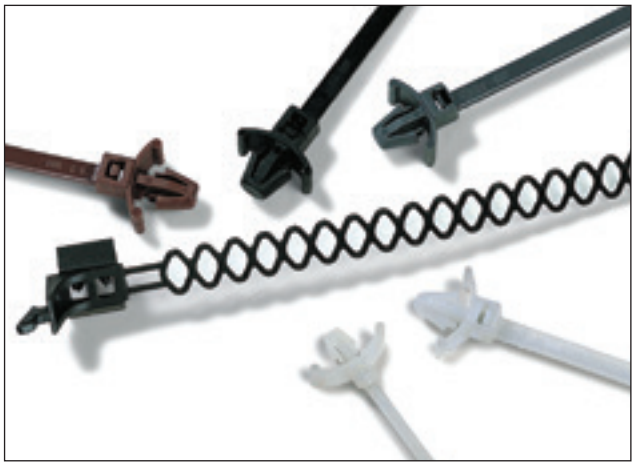
The arrowhead design, in conjunction with the supporting 'legs', ensures a firm and secure fixing. The 'legs' take up any variation in panel thickness enabling one part to suit many applications.

Both the RT and FBS versions are releasable and reusable, with the FBS type having the added feature of a ladder type strap as opposed to the conventional serrated strap - this ladder type strap has the benefit of being very flexible.

Application

For the bundling and fixing of cable harnesses, pipes and hoses in the automotive, aerospace, white goods industries and panel building.

For Application Tools please refer to Page 2/10.



A wide range of arrowhead fixing ties which are suitable for panel thicknesses of 0.5 mm to 4.5 mm and hole diameters of 4.4 mm to 8.0 mm.

Material Data

RoHS

Material	Polyamide 6.6 (PA66)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)

Material Data

RoHS

Material	Polyamide 6.6 heat stabilised (PA66HS)
Operating Temperature	-40°C to +105°C Continuous, (+145°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)

Material Data

RoHS

Material	Polyamide 6.6 UV-Resistant (PA66W)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)

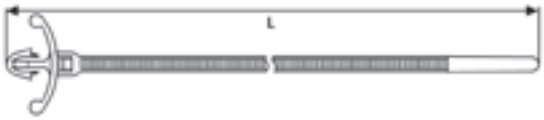
Material Data

RoHS

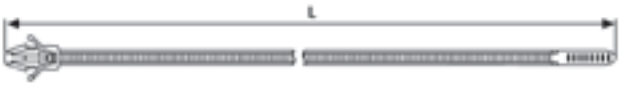
Material	Polyamide 4.6 (PA46)
Operating Temperature	-40°C to +150°C for 5000 h, (+195°C for 500 h)
Flammability	UL94 V2, Limited fire hazard, halogen free, low smoke generation, low generation of toxic gases and corrosive acid

HF (halogenfree)

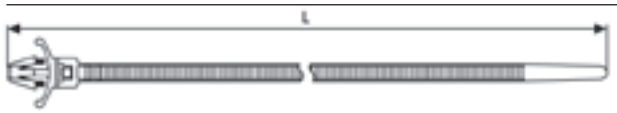
Technical Table



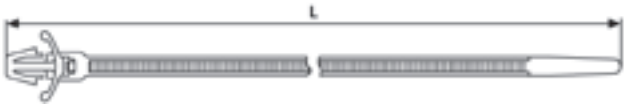
Code	Length (L)	Width (W)	Bundle Ø max.	Min. Tensile Strength (N)	Hole Ø	Panel Thickness min.	Panel Thickness max.	Material	Colour
T18RSF	100	2.5	16	80	4.65-4.85	1.0	3.0	PA66	Natural (NT)
T18RSF	100	2.5	16	80	4.65-4.85	1.0	3.0	PA66W	Black (BK)



T50SSFM	145	4.7	25	225	6.0-6.4	1.0	3.0	PA66	Natural (NA)
T50SSFM	145	4.7	25	225	6.0-6.4	1.0	3.0	PA66HS	Natural (NA)
T50SSFM	145	4.7	25	225	6.0-6.4	1.0	3.0	PA66HS	Black (BK)
T50RSFM	200	4.7	45	225	6.0-6.4	1.0	3.0	PA66	Natural (NA)
T50RSFM	200	4.7	45	225	6.0-6.4	1.0	3.0	PA66W	Black (BK)
T50RSFM	200	4.7	45	225	6.0-6.4	1.0	3.0	PA66HS	Black (BK)



T50VSL5	100	4.6	16	225	6.1-6.3	1.0	2.6	PA66	Natural (NT)
T50SSL5	135	4.6	27	225	6.1-6.5	0.8	2.7	PA66	Natural (NT)
T50SSL5	135	4.6	27	225	6.1-6.5	0.8	2.7	PA66HS	Black (BK)
T50SSL5	135	4.6	27	225	6.1-6.5	0.8	2.7	PA46	Grey (GY)
T50SL5	165	4.6	34	225	6.1-6.3	0.8	2.7	PA66	Natural (NT)
T50SL5	165	4.6	34	225	6.1-6.3	0.8	2.7	PA66HIRHS	Black (BK)
T50SL6	165	4.6	34	225	6.1-6.5	0.8	2.5	PA66	Natural (NT)
T50SL6	165	4.6	34	225	6.3-7.5	0.5	2.5	PA66	Black (BK)
T50SL7	165	4.6	34	225	6.9-7.1	0.8	2.5	PA66	Natural (NT)
T50SL7	165	4.6	34	225	6.9-7.1	0.8	2.5	PA66	Black (BK)



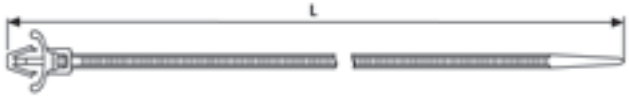
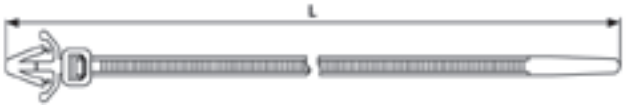
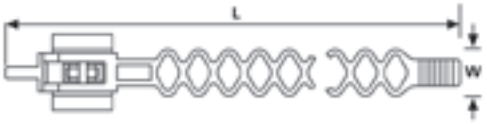
YQR10050	165	4.6	34	225	6.9-7.1	1.6	4.0	PA66	Brown (BN)
T80RFT6X12*	228	4.6	45	225	6.3x12.3*	0.6	3.0	PA46	Grey (GY)

All dimensions in mm. Subject to technical changes.

For Application Tools please refer to Page 2/10.

* for slotted hole drilling

Technical Table

Code	Length (L)	Width (W)	Bundle Ø max.	Min. Tensile Strength (N)	Hole Ø	Panel Thickness min.	Panel Thickness max.	Material	Colour
Releasable									
									
YQR10016	165	4.6	34	225	6.9-7.1	1.6	4.0	PA66	Black (BK)
YQR10016	165	4.6	34	225	6.9-7.1	1.6	4.0	PA66	Grey (GY)
RT50RSF	215	4.6	50	225	7.8-8.2	0.8	2.5	PA66	Black (BK)
RT50SL7	165	4.6	34	225	7.0	–	2.5	PA66	Black (BK)
Releasable									
									
RT18RSF	132	3.0	27.0	80	3.8-4.2	–	2.4	PA66	Natural (NT)
RT50SFK	225	5.0	50	225	6.4-7.0	0.8	3.0	PA66	Black (BK)
RT50SFK	225	5.0	50	225	6.4-7.0	0.8	3.0	PA66HS	Black (BK)
Releasable									
 									
FBS100	115	10	27	–	6.3-6.7	0.7	3.9	PA66	Black (BK)
FBS140	160	10	42	–	6.3-6.7	0.7	3.9	PA66	Black (BK)
FBS185	200	10	53	–	6.3-6.7	0.7	3.9	PA66	Black (BK)

All dimensions in mm. Subject to technical changes.

For Application Tools please refer to Page 2/10.

One Piece Fixing Ties with Arrowhead and Disc

Features and Benefits

A simple one piece bundling and fixing tie with an arrowhead mount. When inserted into the hole the arrowhead locks into place and the 'disc', between the fixing and the head of the cable tie, covers the hole and minimises the ingress of dust, dirt and water, whilst adjusting for variations in panel thickness thereby ensuring a secure fixing at all times.

The RT versions are releasable and reusable, ideal for the removal or addition of cables after the initial installation is complete. The T50SST type has a small 'tab' placed below the head which gives additional protection against axial forces and is particularly useful to assist retention on convoluted tubing.

Application

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



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



One piece fixing tie with arrowhead and disc.

Material Data

RoHS

Material	Polyamide 6.6 heat stabilised (PA66HS)
Operating Temperature	-40°C to +105°C Continuous, (+145°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)

Material Data

RoHS

Material	Polyamide 6.6 (PA66)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)

Material Data

RoHS

Material	Polyamide 4.6 (PA46)
Operating Temperature	-40°C to +150°C for 5000 h, (+195°C for 500 h)
Flammability	UL94 V2, Limited fire hazard, halogen free, low smoke generation, low generation of toxic gases and corrosive acid

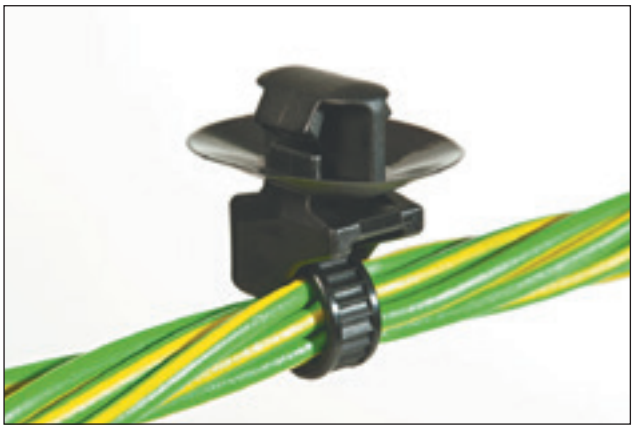
HF (halogenfree)

One Piece Fixing Tie with Arrowhead, with Disc

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

Features and Benefits

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



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





T50MD7

Technical Table

Code	Length (L)	Width (W)	Bundle Ø max.	Disc Ø	Min. Tensile Strength (N)	Hole Ø	Panel Thickness min.	Panel Thickness max.	Material	Colour
T50SD6	160	5.0	31	18.0	180	6.3-7.5	0.6	1.8	PA66	Natural (NT)
T50SD6	160	5.1	31	18.0	225	6.3-7.5	0.6	1.2	PA66HS	Black (BK)
T50SDOP*	160	5.0	30	22.0	225	6.2x12.2	0.7	2.0	PA66HS	Black (BK)
T50SDOR*	160.0	5.0	30.0	22.0	225	6.2x12.2	0.5	1.5	PA66HS	Black (BK)
T50SST5	170	4.6	31	16.2	225	6.1-6.5	0.7	1.5	PA66	Natural (NT)
T50SST5	170	4.6	31	16.2	225	6.1-6.5	0.7	1.5	PA66	Natural (NT)
T50SST5	170	4.6	31	16.2	225	6.1-6.5	0.7	1.5	PA66HS	Black (BK)
T50SST5	170	4.6	31	16.2	225	6.1-6.5	0.7	1.5	PA46	Grey (GY)
T50MD7	225	5.0	59	16.0	225	6.8-7.2	0.8	2.0	PA66HS	Black (BK)
T50MD7	225	5.0	59	16.0	225	6.8-7.2	0.8	2.0	PA66HS	Black (BK)
Releasable										
RT50SD6	160	5.0	31	18.0	180	6.3-7.5	0.6	1.8	PA66	Natural (NT)
RT50SD6	160	5.0	31	18.0	180	6.3-7.5	0.6	1.8	PA66HS	Black (BK)

For Application Tools please refer to Page 2/10.

One Piece Fixing Ties with Arrowhead in the Strap

Features and Benefits

The arrowhead fixing is located in the midsection of the strap of the cable tie which ensures that the cable bundle sits directly above the fixing point, minimising the space taken.

The head of the T80RSF tie is moulded in a raised position to ease assembly when the fixing is already in place in the panel.

The T50SSF type has specially moulded retainers to hold battery cables parallel and firmly in place.

Application

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



Designed to secure battery cables the T50SSF6.5 offers a simple and secure fixing.

Material Data

RoHS

Material	Polyamide 6.6 heat stabilised (PA66HS)
Operating Temperature	-40°C to +105°C Continuous, (+145°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)

Material Data

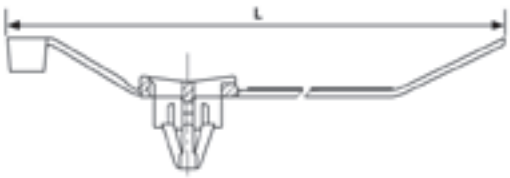
RoHS

Material	Polyamide 4.6 (PA46)
Operating Temperature	-40°C to +150°C for 5000 h, (+195°C for 500 h)
Flammability	UL94 V2

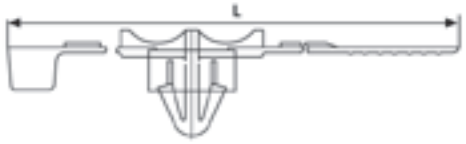
HF (halogenfree)



T80RSFT6.5FW



T80SSF6.5F



T50SSF6.5

Technical Table

Code	Length (L)	Width (W)	Bundle Ø max.	Min. Tensile Strength (N)	Hole Ø	Panel Thickness min.	Panel Thickness max.	Material	Colour
T50SSF6.5	110	4.6	16	225	6.3-6.7	0.5	2.7	PA66HS	Black (BK)
T80SSF6.5F	179	4.6	43	300	6.3-6.5	0.6	3.0	PA66HS	Black (BK)
T80RSF65F	209	4.6	45	300	6.3-6.5	0.6	3.0	PA66HS	Black (BK)
T80RSF6.5FW	209	4.6	45	300	6.3-6.5	0.6	3.0	PA66HS	Black (BK)
T80RSF6.5F	209	4.6	45	300	6.3-6.5	0.6	3.0	PA46	Grey (GY)

All dimensions in mm. Subject to technical changes.

For Application Tools please refer to Page 2/10.

One Piece Fixing Ties with Arrowhead and Disc in the strap

Features and Benefits

The arrowhead fixing is located in the midsection of the strap of the cable tie which ensures that the cable bundle sits directly above the fixing point, minimising the space taken.

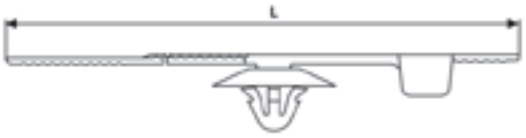
The 'disc' on types T50SSP and T50RSP completely covers the hole in the panel minimising the ingress of dust, dirt and water. The 'discs' on all three types flex to suit variations in panel thickness, ensuring a firm but secure fixing. A particular design feature of these ties is the 'tab' on the end of the head - this is to facilitate easy location and orientation of the head for assembly.



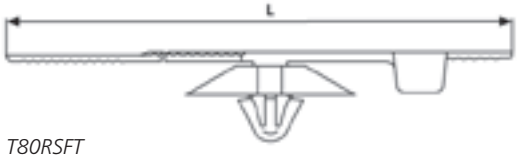
The 'tab' on the head of the tie makes it easy to locate and lift the head for assembly.

Application

With a diverse range of fixing possibilities (from 5.7mm to 6.5mm hole diameters and 0.7mm to 3.5mm panel thickness) this range of fixing ties is ideal for use in many different industries e.g. automotive, aerospace, rail and panel building.



T50SSP/T50RSP



T80RSFT

Material Data

RoHS

Material	Polyamide 6.6 (PA66)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)

Material Data

RoHS

Material	Polyamide 4.6 (PA46)
Operating Temperature	-40°C to +150°C for 5000 h, (+195°C for 500 h)
Flammability	UL94 V2, Limited fire hHazard, halogen free, low smoke generation, low generation of toxic gases and corrosive acid

LFH (Limited Fire Hazard)

Technical Table

Code	Length (L)	Width (W)	Bundle Ø max.	Disc Ø	Min. Tensile Strength (N)	Hole Ø	Panel Thickness min.	Panel Thickness max.	Material	Colour
T50SSP	120	4.6	24	18.0	225	6.0-6.5	0.7	1.3	PA66	Black (BK)
T50RSP	190	4.6	45	18.0	222	6.0-6.5	0.75	1.3	PA66	Black (BK)
T80RSFT	190	4.6	45	24.4	356	5.7-6.3	1.0	3.5	PA66HS	Natural (NT)
T80RSFT	190	4.6	45	24.4	356	5.7-6.3	1.0	3.5	PA66HS	Black (BK)
T80RSFT	190	4.6	45	24.4	356	5.7-6.3	1.0	3.5	PA46	Grey (GY)

All dimensions in mm. Subject to technical changes.

For Application Tools please refer to Page 2/10.

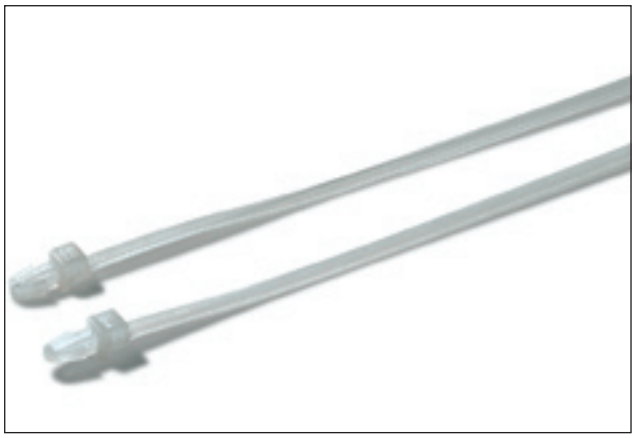
One Piece Fixing Tie with Arrowhead

Features and Benefits

The arrowhead is simply pushed through the panel and locks into place, the design of the arrowhead (without 'legs') ensures that the minimum amount of space is used, and yet offers a firm, secure fixing.

Application

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



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



T30RSF



T50RSF



T50RSF(U)

Material Data

RoHS

Material	Polyamide 6.6 (PA66)
Colour	Natural (NA)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)

Material Data

RoHS

Material	Polyamide 6.6 heat stabilised (PA66HS)
Colour	Black (BK)
Operating Temperature	-40°C to +105°C Continuous, (+145°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)

Technical Table

Code	Length (L)	Width (W)	Bundle Ø max.	Min. Tensile Strength (N)	Hole Ø	Panel Thickness min.	Panel Thickness max.	Material	Colour
T30RSF(U)	161	3.6	31.8	135	4.76-5.59	0.9	2.36	PA66	Natural (NT)
T30RSF(U)	161	3.6	31	135	4.8-5.6	0.9	2.3	PA66HS	Black (BK)
T50RSF(E)	210	4.6	50	225	6.2-6.4	2.9	3.1	PA66	Natural (NT)
T50RSF(E)	210	4.6	50	225	6.2-6.4	2.9	3.1	PA66	Black (BK)

All dimensions in mm. Subject to technical changes.

For Application Tools please refer to Page 2/10.

Please Note for Product Specific Approvals please refer to Appendix.

Cable Tie and Arrowhead Mount Assemblies

Features and Benefits

These two piece fixing ties are supplied ready assembled and offer a simple and versatile method of bundling and fixing cables, pipes and hoses.

The arrowhead base will easily push into pre-punched holes in panels and offers a very secure fixing. The two piece design enables the head of the tie to be orientated to the required position to ease assembly, whilst the 'disc' on the top of the arrowhead takes up variation in panel thickness ensuring a stable fixing at all times.

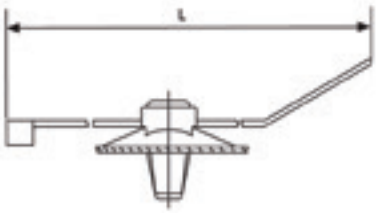
Available as either inside serrated or outside serrated 'standard' cable ties or 'double headed' ties.

Application

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



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



Two piece fixing tie with moveable arrowhead.

Material Data

RoHS

Material	Polyamide 6.6 high impact modified,
Colour	Heat Stabilised (PA66HIRHS)
Operating	Black (BK)
Temperature	-40°C to +105°C
Flammability	UL94 HB

Material Data

RoHS

Material	Polyamide 6.6 heat stabilised (PA66HS)
Colour	Black (BK)
Operating	-40°C to +105°C Continuous,
Temperature	(+145°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)

Technical Table

Code	Length (L)	Width (W)	Bundle Ø max.	Disc Ø	Min. Tensile Strength (N)	Hole Ø	Panel Thickness min.	Panel Thickness max.	Material	
									Cable Tie	Foot Part
T50SSFT6.5	150	4.6	31	22.4	225	6.3-6.7	0.7	2.0	PA66HS	PA66HS
T50RSFT65	200	4.6	45	22.4	225	6.3-6.7	0.7	2.0	PA66HS	PA66HS
T50RSFT6.5D18	200	4.6	45	18.0	225	6.5-6.8	0.4	1.6	PA66HS	PA66HIRHS
T50RDHSFT6.5	210	4.7	45	22.4	225	6.5-7.0	0.7	2.0	PA66HS	PA66HS
T80ISFT6.5	300	4.6	81	22.4	355	6.3-6.7	0.7	2.0	PA66HS	PA66HS

All dimensions in mm. Subject to technical changes.

For Application Tools please refer to Page 2/10.

One Piece Fixing Ties with Fir Tree Mount

Features and Benefits

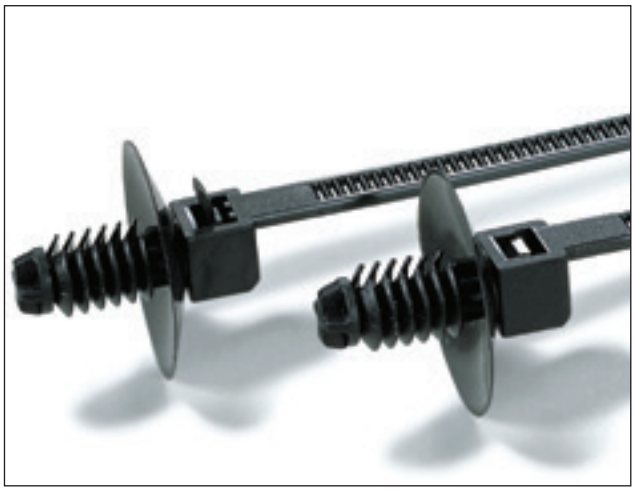
This one piece cable tie with fir tree fixing offers a simple and easy to use method of bundling and fixing cables, pipes and hoses.

The design of the fir tree ensures a positive and secure fixing into panels from 0.8 mm to 7.0 mm deep or threaded blind holes.

The 'disc' on the top of the fir tree covers the hole and minimises the ingress of dust, dirt and water.
Type REL are releasable and reusable and are ideal for the removal or addition of cables after the initial installation is completed.

Application

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



Ideal for use in 'thick' panels and threaded, blind holes.

Material Data

Material	Polyamide 6.6 (PA66)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

RoHS

HF (halogenfree)



One piece fixing tie with fir tree mount

Technical Table

Code	Length (L)	Width (W)	Bundle Ø max.	Disc Ø	Min. Tensile Strength (N)	Hole Ø	Panel Thickness min.	Panel Thickness max.	Material	Colour
T18RDP5	110	2.5	20	13.0	80	4.9-5.1	3.0	4.0	PA66	Black (BK)
T50SDP6	170	5.0	31	22.0	180	6.3-7.1	0.8	7.0	PA66	Natural (NT)
FT220DP7	230	4.7	40	16.0	225	6.8-7.2	0.8	5.0	PA66	Black (BK)
Releasable										
REL30SDP6	170	5.0	31	22.0	135	6.3-7.0	3.0	7.0	PA66	Black (BK)

All dimensions in mm. Subject to technical changes.

For Application Tools please refer to Page 2/10.

Cable Tie and Fir Tree Mount Assemblies

Features and Benefits

These two piece fixings are supplied ready assembled and offer a simple and versatile method of bundling and fixing cables. The fir tree base will easily push into pre punched holes in panels or threaded, blind holes, and offers a very secure fixing.

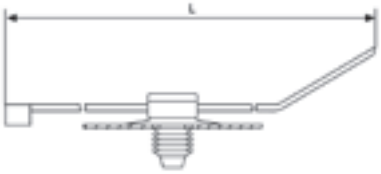
The two piece design enables the head of the tie to be orientated to the required position to ease assembly, whilst the 'disc' on the top of the fir tree covers the hole and minimises the ingress of dust, dirt and water.



These fir tree fixings can also be used in threaded and blind holes.

Application

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



One piece fixing tie with fir tree mount

Technical Table

Code	Length (L)	Width (W)	Bundle Ø max.	Disc Ø	Min. Tensile Strength (N)	Hole Ø	Panel Thickness min.	Panel Thickness max.	Colour	Material	
										Cable Tie	Foot Part
T30RFT5	150	3.6	31	16.0	135	4.5-5.0	0.7	3.0	Black (BK),	PA66HS	PA66
									Grey (GY)		
T30RFT5	150	3.6	31	16.0	135	4.5-5.0	0.7	3.0	Black (BK)	PA66HS	PA66HIRHS
T30RFT5	150	3.6	31	16.0	135	4.5-5.0	0.7	3.0	Natural (NT),	PA46	PA46
									Grey (GY)		
T50RFT5	200	4.6	45	16.0	225	4.5-5.0	0.7	3.0	Black (BK),	PA66HS	PA66
									Grey (GY)		
T50RFT5	200	4.6	45	16.0	225	4.5-5.0	0.7	3.0	Black (BK)	PA66HS	PA66HIRHS
T50SFT5	150	4.6	31	16.0	225	4.5-5.0	0.7	3.0	Black (BK),	PA66HS	PA66
									Grey (GY)		
T18RFT6	100	2.5	20	16.0	80	6.4-7.1	0.75	3.0	Black (BK)	PA66	PA66
T30LFT6LG	190	3.6	45	16.0	135	6.4-7.1	0.75	6.0	Black (BK)	PA66	PA66HIRHS
T30LRFT6	260	3.3	65	16.0	180	6.4-7.1	0.75	3.0	Black (BK)	PA66HS	PA66HIRHS
T30RFT6	150	3.6	31	16.0	135	6.4-7.1	0.75	3.0	Black (BK)	PA66HS	PA66HIRHS
T30RFT6LG	150	3.6	31	16.0	135	6.4-7.1	0.75	6.0	Black (BK)	PA66HS	PA66HIRHS
T50RDHFT6	210	4.7	19	16.0	225	6.4-7.1	0.75	3.0	Black (BK)	PA66HS	PA66HIRHS
T50RFT6	200	4.6	45	16.0	225	6.4-7.1	0.75	3.0	Grey (GY)	PA46	PA46
T50RFT6	200	4.6	45	16.0	225	6.4-7.1	0.75	3.0	Black (BK)	PA66	PA66
T50RFT6	200	4.6	45	16.0	225	6.4-7.1	0.75	3.0	Black (BK)	PA66HS	PA66HS
T50RFT6LG	200	4.6	45	16.0	225	6.4-7.1	0.75	6.0	Black (BK)	PA66HS	PA66HIRHS
T50ROSFT6	200	4.6	45	16.0	225	6.4-7.1	0.75	3.0	Black (BK)	PA66HS	PA66HIRHS
T50SFT6	150	4.6	31	16.0	225	6.4-7.1	0.75	3.0	Black (BK)	PA66	PA66
T50SFT6LG	150	4.6	31	16.0	225	6.4-7.1	0.75	6.0	Black (BK)	PA66HS	PA66HIRHS
T80IFT6	300	4.6	81	16.0	355	6.4-7.1	0.75	3.0	Black (BK)	PA66HS	PA66HIRHS
T80IFT6LG	300	4.6	81	16.0	355	6.4-7.1	0.75	6.0	Black (BK)	PA66HS	PA66HIRHS
T80LFT6	390	4.6	108	16.0	355	6.4-7.0	0.75	3.0	Black (BK)	PA66HS	PA66HIRHS
T50IFT7	300	4.6	81	16.0	225	6.5-7.0	0.8	7.0	Black (BK)	PA66	PA66
T50IFT7	300	4.6	81	16.0	225	6.5-7.0	0.8	7.0	Black (BK),	PA66	PA66
T50RFT7	200	4.6	45	16.0	225	6.5-7.0	0.8	7.0	Black (BK)	PA66	PA66
T50RFT7	200	4.6	45	16.0	225	6.5-7.0	0.8	7.0	Black (BK)	PA66HS	PA66HS
T50SFT7	160	4.6	31	16	225	6.5-7.0	0.8	7.0	Black (BK)	PA66	PA66
T50RFT8	200	4.6	45	16.0	225	7.7-8.0	0.8	6.0	Black (BK)	PA66	PA66
T50RFT8	200	4.6	45	16.0	225	7.7-8.0	0.8	6.0	Black (BK)	PA66HS	PA66HS
T120IFT9	300	7.6	75	20.0	535	8.8-9.4	4.0	8.0	Black (BK)	PA66HIR(S)	PA66HIR(S)
T50RFT10	200	4.6	45	18.0	225	9.7-10.0	0.8	5.0	Black (BK)	PA66HS	PA66HS
T50RFT10	200	4.6	45	18.0	225	9.7-10.0	0.8	5.0	Black (BK)	PA66	PA66

All dimensions in mm. Subject to technical changes.

For Application Tools please refer to Page 2/10.

Rivet Fixing Ties

Features and Benefits

These ties are simply installed by pushing the rivet part of the tie into a hole and firmly tapping the rivet pin until flush to the surface.

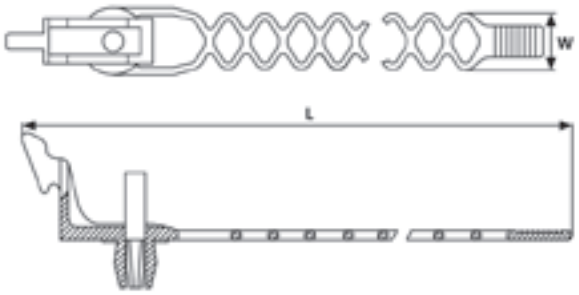
The pin expands the wings of the rivet and the tie is firmly locked in place.

All three versions listed are releasable and reusable allowing for the removal or addition of cables after installation.

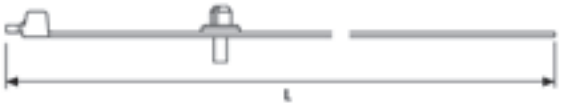
The RELF and RI ranges are conventional 'serrated' cable ties, whilst the FBR range have a 'ladder-type' design which is locked by stretching the strap over the head of the tie. The design of the FBR results in a very flexible strap.



FBR cable ties have a flexible 'ladder' design of strap - ideal for secure fixing into thin panels (up to 2.5mm thick).



Fixing ties type FBR.



Fixing ties type RELF.



Fixing ties type RI.

Material Data

RoHS

Material	Polyamide 6.6 (PA66)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)

Material Data

RoHS

Material	Polyamide 12 (PA12)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 HB

HF (halogenfree)

Material Data

Material	Polyamide 6.6 high impact modified (PA66HIR)
Colour	Black (BK)
Operating Temperature	-40°C to +80°C Continuous, (+105°C for 500 h)
Flammability	UL94 HB

Technical Table

Code	Length (L)	Width (W)	Bundle Ø max.	Min. Tensile Strength (N)	Hole Ø	Panel Thickness min.	Panel Thickness max.	Material	Colour
FBR6/100	115	10.0	27	–	6.2-6.5	0.8	2.4	PA66	Black (BK)
FBR6/140	160	10.0	42	–	6.2-6.5	0.8	2.4	PA66	Black (BK)
FBR6/185	200	10.0	53	–	6.2-6.5	0.8	2.4	PA66	Black (BK)
FBR7/100	115	10.0	27	–	7.2-7.5	0.8	2.4	PA66	Black (BK)
FBR7/140	160	10.0	42	–	7.2-7.5	0.8	2.4	PA66	Black (BK)
FBR7/185	200	10.0	53	–	7.2-7.5	0.8	2.4	PA66	Black (BK)
RELF170	180	8.0	44.0	180	6.3	2.5	2.5	PA66HIR	Black (BK)
RI 80	80	7.0	16	265	6.9-7.1	0.8	2.2	PA12	Black (BK)
RI 120	120	9.0	28	265	6.9-7.1	0.8	2.2	PA12	Black (BK)
RI 160	160	9.0	41	265	6.9-7.1	0.8	2.2	PA12	Black (BK)

All dimensions in mm. Subject to technical changes.

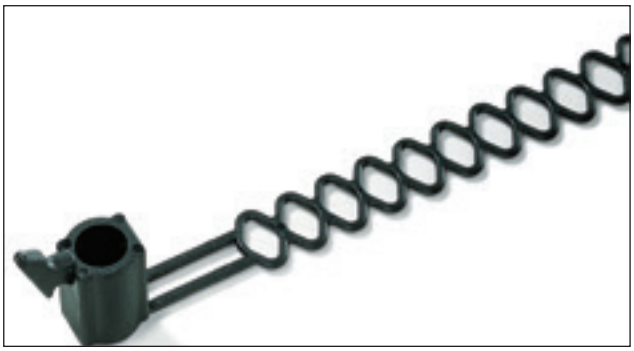
For Application Tools please refer to Page 2/10.

Cable Ties for Weld Studs

Features and Benefits

This one piece cable tie and fixing offers a simple and easy to use method of bundling and fixing cables, pipes and hoses. The design of the stud fixing ensures simple mounting while giving a positive and secure fixing.

A variety of designs gives the choice of a soft 'push fit' or 'hammer fit'. Both designs give excellent 'pull off' forces in relation to the application forces.



FBB one piece fixing ties for weld studs, can be easly removed by unscrewing in an anti-clockwise direction.

Material Data

RoHS

Material	Polyamide 6.6 heat stabilised (PA66HS)
Operating Temperature	-40°C to +105°C Continuous, (+145°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)

Material Data

RoHS

Material	Polyamide 4.6 (PA46)
Operating Temperature	-40°C to +150°C for 5000 h, (+195°C for 500 h)
Flammability	UL94 V2, Limited fire hazard, halogen free, low smoke generation, low generation of toxic gases and corrosive acid

LFH (Limited Fire Hazard)

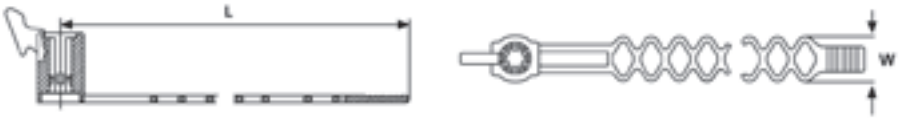
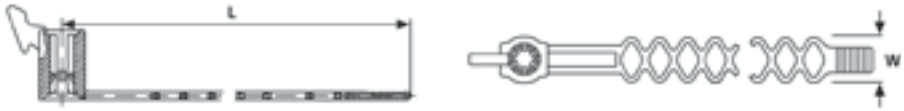
Material Data

RoHS

Material	Polyamide 6.6 (PA66)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)

Technical Table

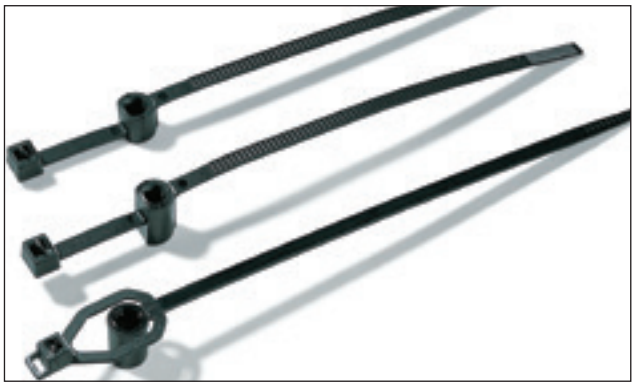
Code	Length (L)	Width (W)	Bundle Ø max.	Min. Tensile Strength (N)	Material	Colour
						
FBB100	110	10.0	23	–	PA66	Black (BK)
FBB140	142	10.0	38	–	PA66	Black (BK)
FBB185	200	10.0	50	–	PA66	Black (BK)
						
FBB100M	110	10.0	23	–	PA66	Black (BK)
FBB185M	200	10.0	50	–	PA66	Black (BK)
						
SBR5	220	6.0	40	300	PA66HS	Black (BK)
SBR5	220	6.0	40	300	PA66	Black (BK)
SBR8S	215	6.0	40	300	PA46	Grey (GY)

All dimensions in mm. Subject to technical changes.

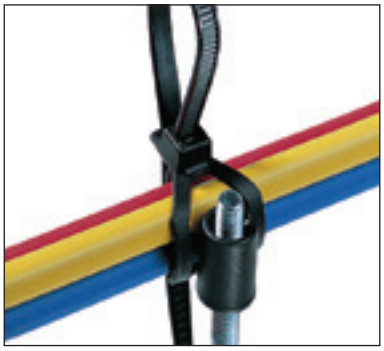
Cable Ties for Weld Studs

Features and Benefits

These weld stud fixing ties are designed to be fitted onto 5mm studs or 5mm ISO threaded studs. The types T50RS5, RT50RS5 and SBS9/230 are designed to be applied by hand (Soft Push). Types SB14 and SB9 are designed to be hammered onto the stud (Hard Push).
Both types give excellent 'pull-off' forces in relation to the application forces.



With the RT50RS5 and the SB14/172 you can mount pipes or cables to a weld stud.



Simple fixing to a weld stud or 5mm ISO bolt.

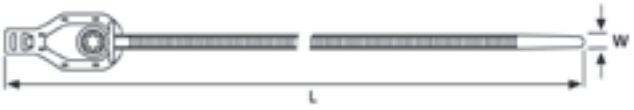
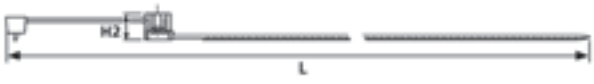
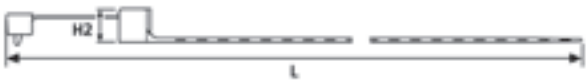
Material Data

Material	Polyamide 6.6 (PA66)
Colour	Black (BK)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

RoHS

HF (halogenfree)

Technical Table

Code	Length (L)	Width (W)	Height (H2)	Bundle Ø max.	Min. Tensile Strength (N)	Material	Colour
							
T50RS5	190	4.6	14.5	40	225	PA66	Black (BK)
RT50RS5	190	4.6	14.5	40	225	PA66	Black (BK)
							
SBS9/230	230	5.0	10.0	60	245	PA66	Black (BK)
							
SB9/172	172	5.0	10.0	40	245	PA66	Black (BK)
SB9/230	230	5.0	10.0	60	245	PA66	Black (BK)
SB14/172	172	5.0	15.5	40	245	PA66	Black (BK)
SB14/230	230	5.0	15.5	60	245	PA66	Black (BK)

All Dimensions in mm. Subject to technical changes.

For Application Tools please refer to Page 2/10.

Cable Tie and Weld Stud Fixing Assemblies



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

Features and Benefits

These two piece fixing ties consist of the cable tie from the 'inside' or 'outside serrated' series with the foot part for fixing to weld studs already mounted on the strap. They are easy to press onto a 5mm type weld stud (also suitable for M5 screws) without the need for separate application tools. Because the foot part slides along the cable tie, the head can be rotated into the best position both during fitting and also for installation.

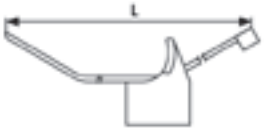
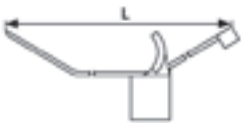
Series SBH5 and SBH5SD features a flat plate on the foot part which can simultaneously fix an insulation mat. Series SB5 and SBS5 have a cable guide on the weld stud. Series SB5 has an oval weld stud for equalisation of the cable loom if out of line with the main loom.

Application

Series SBH5 and SBH5SD are used mainly in the automotive industry. The SD variant is for the smallest bundle diameters, from 1.0mm.

Suitable for bundling and fastening cables, pipes and hoses in a multitude of industries, for example: switch gear manufacture, automotive and machine manufacture.

Technical Table

Code	Length (L)	Width (W)	Bundle Ø max.	Disc Ø	Min. Tensile Strength (N)	Material	
						Cable Tie	Foot Part
		 *SBH5*			 *SBH5SD*		
T30RSBH5	150	3.5	31	30.0	135	PA66HS	PA66HS
T50RSBH5	200	4.6	45	30.0	225	PA66HS	PA66HS
T50ROSSBH5SD	200	4.6	45	30.0	225	PA66HS	PA66HS
T80ISBH5	300	4.6	81	30.0	355	PA66HS	PA66HS
							
T30RSBS5	150	3.5	31	–	135	PA66HS	PA66HS
T50ROSSBS5	200	4.6	45	–	225	PA66HS	PA66HS
T50RSBS5	200	4.6	45	–	225	PA66HS	PA66HS
T50SSBS5	150	4.6	31	–	225	PA66HS	PA66HS
T80ISBS5	300	4.6	81	–	355	PA66HS	PA66HS
							
T30RSB5	150	3.5	31	–	135	PA66HS	POM
T40RSB5	175	4.0	38	–	180	PA66HS	POM
T50SSB5	150	4.6	31	–	225	PA66HS	POM
T50RSB5	200	4.6	45	–	225	PA66HS	POM
T50ROSSB5	200	4.6	45	–	225	PA66HS	POM

All dimensions in mm. Subject to technical changes.

For Application Tools please refer to Page 2/10.

Double Mounting Base For Weld Studs

Features and Benefits

These are three part fixing ties, with a stud fix mounting base and two cable ties. The mounting base can be fitted to the weld stud prior to installing the cables, the cables are simply laid alongside the base and the cable ties then pulled tight. Having two separate 'cradles' allows for the installation of the two cable runs at different times.

The design of the stud retainer means excessive force is not required for installation - it is simply a 'soft push' action by hand.

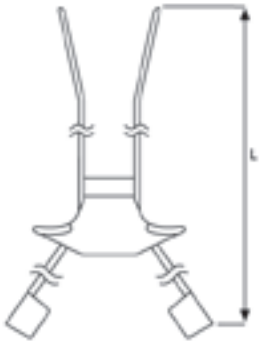
Having separate ties to the fixing means that the head of the tie can be easily rotated to ensure the easiest possible assembly.

Application

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



Parallel fixation of two cables.



T50SDSBS5, T50ROSDSBS5

Material Data

Cable Tie	Polyamide 6.6 heat stabilised (PA66HS)
Colour	Black (BK)
Operating Temperature	-40°C to +105°C Continuous, (+145°C for 500 h)
Flammability	UL94 V2

RoHS

HF (halogenfree)

Material Data

Foot Part	Polyamide 6.6 high impact modified, heat stabilised (PA66HIRHS)
Colour	Black (BK)
Operating Temperature	-40°C to +105°C
Flammability	UL94 HB

RoHS

Technical Table

Code	Length (L)	Width (W)	Bundle Ø max.	Min. Tensile Strength (N)	Stud Ø	Material	
						Cable Tie	Foot Part
T50SDSBS5	150	4.6	31	225	5.0	PA66HS	PA66HIRHS
T50ROSDSBS5	200	4.6	45	225	5.0	PA66HS	PA66HIRHS

All dimensions in mm. Subject to technical changes.

For Application Tools please refer to Page 2/10.

Cable Ties and Edge Clips

Features and Benefits

Available with either 'inside' or 'outside' serrated ties these two piece assemblies simply push onto metal or plastic 'edges' with thicknesses from 1.0 to 3.0mm and from 3.0 to 6.0mm. The high 'pull off' forces are due to the integrated metal clamp.

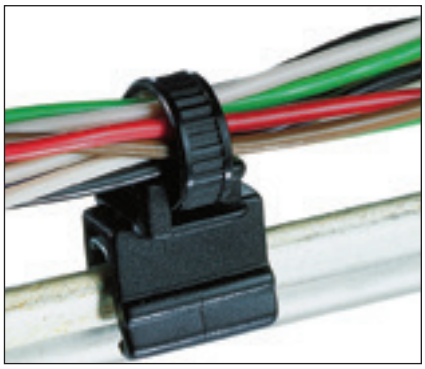
Different Edge Clip variations are available. One version allows for cables to run parallel to the metal/plastic edge, whilst another allows for installation at 90°C to the metal edge.

The clip is simply pushed on by hand and held firmly in place by the integrated metal clamp. No fixing hole is necessary.

Combined with the outside serrated (OS) ties, specially designed to protect cables from chafing (see section 1.1) and wear, the Edge Clip family provides an excellent fastening solution.

Application

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



T50ROSEC4A - the cable bundle runs parallel with the edge.



T50ROSEC5B - the cable runs 90°C to the edge.

Material Data

RoHS

Material	Polyamide 6.6 heat stabilised (PA66HS)
Colour	Black (BK)
Operating Temperature	-40°C to +105°C Continuous, (+145°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)

Material Data

RoHS

Material	Polyamide 6.6 high impact modified, heat stabilised (PA66HIRHS)
Colour	Black (BK)
Operating Temperature	-40°C to +105°C
Flammability	UL94 HB

Material Data

RoHS

Material	Polyamide 6.6 UV-Resistant (PA66W) weather resistant
Colour	Black (BK)
Operating Temperature	-40°C to +85°C (+105°C, 500 h)
Flammability	UL94 HB
Material Propertie	High yield strength, UV-Resistant

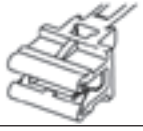
Weather resistant material available on request

HF (halogenfree)

Cable Ties and Edge Clips for Panel Thickness 1.0 to 3.0mm

With the Edge Clip family the bundled cables can be located either above or to the side of a fixing. In all two-piece mounting ties, the edge clip moves freely along the tie. This allows the head of the tie to be rotated during mounting for installation in the ideal position.

Technical Table

Code	Length (L)	Width (W)	Bundle Ø max.	Min. Tensile Strength (N)	Material		Drawing
					Cable Tie	Foot Part	
Two piece, panel thickness 1.0 - 3.0mm							
T50ROSEC4A	200	4.6	45	225	PA66HS	PA66HIRHS	
T50ROSEC4B	200	4.6	45	225	PA66HS	PA66HIRHS	
T50ROSEC5A	200	4.6	45	225	PA66HS	PA66HIRHS	
T50ROSEC5B	200	4.6	45	225	PA66HS	PA66HIRHS	
T50ROSEC9	200	4.6	45	225	PA66HS	PA66HIRHS	
T50ROSEC10	200	4.6	45	225	PA66HS	PA66HIRHS	
T50ROSEC21	200	4.6	45	225	PA66HS	PA66HIRHS	
T50ROSEC22	200	4.6	45	225	PA66HS	PA66HIRHS	
One piece, panel thickness 1.0 - 3.0mm							
T50SOSEC12E	160	4.6	35	225	PA66HS	PA66HS	
T50SOSEC13E	160	4.6	35	225	PA66HS	PA66HS	

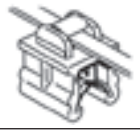
All dimensions in mm. Subject to technical changes.

For Application Tools please refer to Page 2/10.

Cable Ties and Edge Clips for Panel Thickness 3.0 to 6.0mm

The Edge Clips are produced as two part mounting clips for metal or plastic edge mounting of 3.0 to 6.0mm. The 'loose' tie means the head can be rotated during fitting for installation in the best position with respect to the tie closure. Combined with our outside-serrated (OS) ties, they reduce the risk of chafe and cable damage by offering a smooth surface to the cable insulation and are suitable for minimum bundle diameters of 1.0mm.

Technical Table

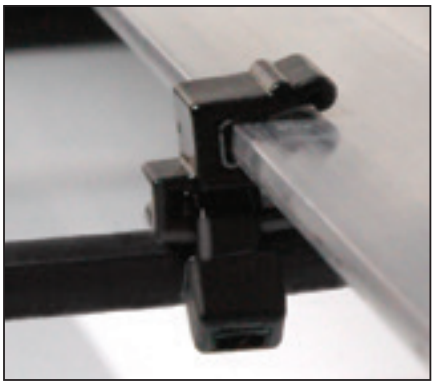
Code	Length (L)	Width (W)	Bundle Ø max.	Min. Tensile Strength (N)	Material		Drawing
					Cable Tie	Foot Part	
Two piece, panel thickness 3.0 - 6.0mm							
T50ROSEC19	200	4.6	45	225	PA66HS	PA66HIRHS	
T50ROSEC20	200	4.6	45	225	PA66HS	PA66HIRHS	
T50ROSEC23	200	4.6	45	225	PA66HS	PA66HIRHS	
T50ROSEC24	200	4.6	45	225	PA66HS	PA66HIRHS	

All dimensions in mm. Subject to technical changes.

For Application Tools please refer to Page 2/10.

Edge Clip and UV-Stabilised Cable Tie Assemblies

Designed specifically to route cables by securing them to a metal or plastic frame rail edge. Edge Clips and UV-Stabilised cable tie assemblies eliminate the need for mounting holes and mechanical fasteners. Edge Clips are easy to secure and the extraction force is high due to the integrated metal clamp that holds the Edge Clip in place. This allows cable ties to firmly hold the cable, preventing chafing of the cable and ensuring long-term reliability.



Cable Tie Material Data

RoHS

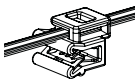
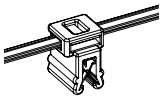
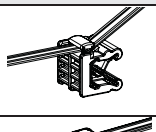
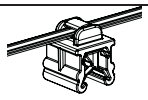
Material	Polyamide 6.6 heat stabilised (PA66UV)
Operating Temperature	-40 °F to +185 °F (-40 °C to +85 °C)
Flammability	UL94V-2

Edge Clip Material Data

RoHS

Material	Polyamide 6.6 high impact modified, heat stabilised, UV-stablilised (PA66HIRHSUV)
Operating Temperature	-40 °F to +230 °F (-40 °C to +110 °C)
Flammability	UL94 HB

Product Selection

Code	Min. Tensile Strength lbs. (N)	Length in. (mm)	Max Bundle in. (mm)	Panel Thickness Minimum in. (mm)	Panel Thickness Maximum in. (mm)	Color	Pkg. Qty	Drawing
1-3mm Edge Thickness								
T50REC5A	50 (225)	8.0 (202.0)	2.0 (45.0)	0.04 (1.0)	0.12 (3.0)	Black	100	
T50REC4A	50 (225)	8.0 (202.0)	2.0 (45.0)	0.04 (1.0)	0.12 (3.0)	Black	100	
3-6mm Edge Thickness								
T50REC23	50 (225)	8.0 (202.0)	2.0 (45.0)	0.12 (3.0)	0.24 (6.0)	Black	100	
T50REC20	50 (225)	8.0 (202.0)	2.0 (45.0)	0.12 (3.0)	0.24 (6.0)	Black	100	

Use Part No. for ordering and Code for specification.

For Application Tools please refer to Page 2/10.

MR Range of Mounting Head Ties

Features and Benefits

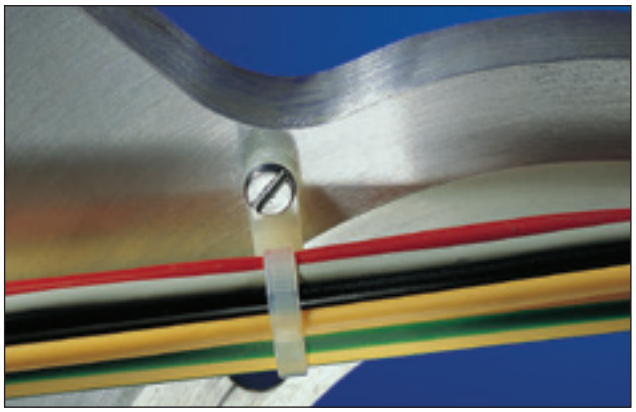
A one piece bundling and fixing tie offering quick and easy installation.

Application

This range of one piece cable ties has a mounting hole fixing method. Once fastened around the cables the bundle can be simply secured to the panel with a screw or bolt.

Ideal for fixing cables, pipes and hoses onto solid surfaces with pre-drilled holes or holes in metal plates.

These ties are used in many industries e.g. building construction, panel builders and white goods manufacturers.



The mounting head ties can be easily screwed onto a panel.

Material Data

RoHS

Material	Polyamide 6.6 (PA66)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)

Material Data

RoHS

Material	Polyamide 6.6 heat stabilised (PA66HS)
Colour	Natural (NT), Black (BK)
Operating Temperature	-40°C to +105°C Continuous, (+145°C for 500 h)
Flammability	UL94 V2

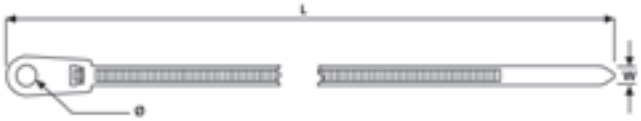
HF (halogenfree)

Material Data

RoHS

Material	Polyamide 6.6 UV-Resistant (PA66W)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)



Technical Table

Code	Length (L)	Width (W)	Bundle Ø max.	Min. Tensile Strength (N)	Hole Ø	Material	Colour
T18MR	110	2.5	20	80	3.1	PA66	Black (BK)
T18MR	110	2.5	20	80	3.1	PA66	Natural (NT)
T18MR	110	2.5	20	80	3.1	PA66HS	Natural (NT)
T30MR	160	3.5	32	135	4.3	PA66	Black (BK)
T30MR	160	3.5	32	135	4.3	PA66	Natural (NT)
T30MR	160	3.5	32	135	4.3	PA66W	Black (BK)
T50MR	215	4.6	45	225	5.4	PA66	Natural (NT)
T50MR	215	4.6	45	225	5.4	PA66W	Black (BK)
T50MR	215	4.6	45	225	5.4	PA66	Black (BK)
T50MS	165	4.6	32	225	5.3	PA66	Natural (NT)
T50MS	165	4.6	32	225	5.3	PA66	Black (BK)
T50ML	390	4.6	100	225	5.5	PA66	Natural (NT)
T50ML	390	4.6	100	225	5.5	PA66	Black (BK)
T120MR(E)	395	7.6	102	535	6.5	PA66	Black (BK)
T120MR(E)	395	7.6	102	535	6.5	PA6W	Black (BK)
T120MR(E)	395	7.6	102	535	6.5	PA66W	Natural (NT)

All dimensions in mm. Subject to technical changes.

For Application Tools please refer to Page 2/10.

Please Note for Product Specific Approvals please refer to Appendix.

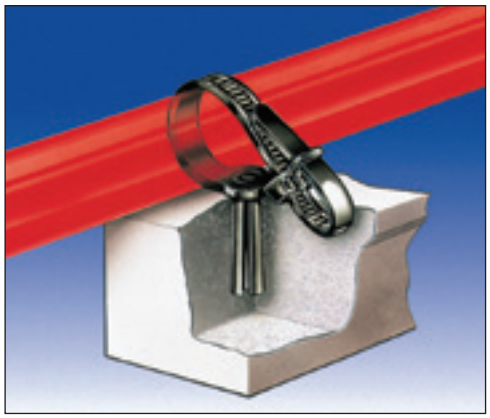
WPT Ties

Features and Benefits

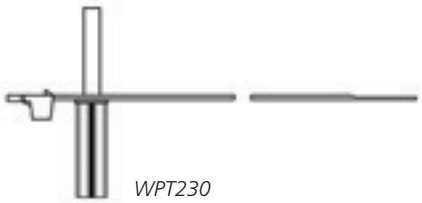
One piece fixing and cable tie can be fixed to brick, cement or wood. This product is often used in the construction industry and is both time saving and versatile.

Application

Simply drill an 8mm hole and knock in the peg. Used to fasten cables, pipes or hoses in place.



Wall plug tie in application.



WPT230

Technical Table

Code	Length (L)	Width (W)	Bundle Ø max.	Min. Tensile Strength (N)	Hole Ø	Material	Colour
WPT230	230	8	59	–	8.0	PA66HIR	Black (BK)

All Dimensions in mm. Subject to technical changes.

For Application Tools please refer to Page 2/10.

Material Data

Material	Polyamide 6.6 high impact modified (PA66HIR)
Operating Temperature	-40°C to +80°C Continuous, (+105°C for 500 h)
Flammability	UL94 HB

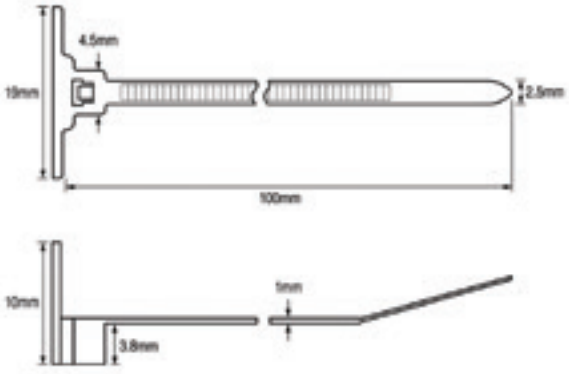
T18RSA Self Adhesive Cable Tie

Features and Benefits

This cable tie and integral self adhesive base ensures a firm securement of wiring bundles to a variety of materials. The T18RSA is both quick and easy to install.

Application

Ideal for use in a variety of clean applications.



Technical Table

Code	Length (L)	Width (W)	Bundle Ø max.	Min. Tensile Strength (N)	Material	Colour
WPT230	230	8	59	8.0	PA66HIR	Black (BK)

All dimensions in mm. Subject to technical changes.

Material Data

Material	Polyamide 6.6 (PA66)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)

Cable and Wire Mounts

	Page
TY Self Adhesive Cable Tie Mounts	2/72
Self Adhesive / Screw Fixing Cable Tie Mounts	2/73
CTAM and CTAP, MB and TY Cable Tie Mounts	2/74
LKC and NY Cable Tie Mounts	2/76
KR Cable Tie Mounts	2/77
LKM, CL8 and FH Cable Tie Mounts	2/78
Mounting Plates Types MP and MSMP	2/79
Cable Fixing Accessory TM1SF	2/79
SFC Arrowhead Cradle	2/80
TY5 Rivet Mount	2/81
WPC - Wire Push In Clips and Screw Mount D-Clip	2/82
LOK Fixing Base and EasyHold Fastening Systems	2/83
Cable Fixing Accessories Tape Clip, COW series and CH Series	2/84
Cable Fixing Accessories Tape Clip, TC and CH Series	2/85
Cable Fixing Accessories Edge Clip	2/86
Aluminium P-Clips	2/87
HP & NX Plastic P-Clips	2/89
Klam-Bush (KB)	2/90
TriKlamp	2/90



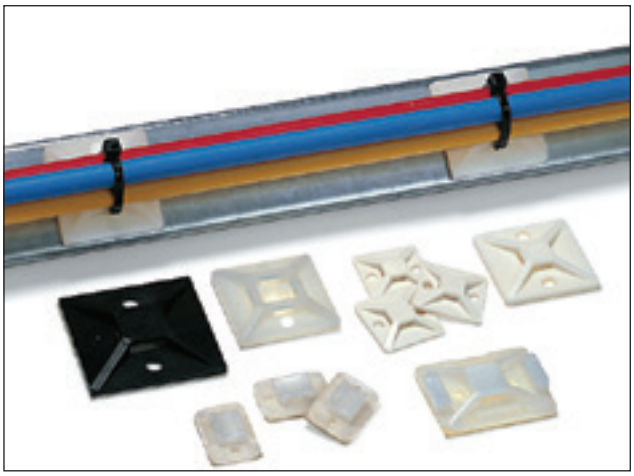
TY Self Adhesive Cable Tie Mounts

Features and Benefits

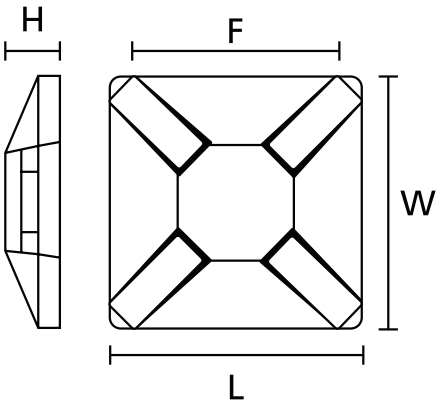
TY mounts are particularly suitable for applications with minimal space - they are mounted into the equipment prior to cable installation. The cables can be attached using a range of standard cable ties.

Application

These products are designed for simple, yet robust. installation in a wide variety of applications - particularly used in telecoms equipment, switchgear and control cabinets.



Cable Tie Mounts TY



Material Data

Material	Polyamide 6.6 (PA66)
Colour	Black (BK), Natural (NA)
Operating Temperature	-40°C to +105°C Continuous, (+145°C for 500 h)
Flammability	UL94 V2

RoHS

HF (halogenfree)

Product Selection

Code	Length (L)	Width (W)	Height (H)	Fixing Hole Ø (FH)	Strap Width max. (G)	Material	Colour	Adhesive
TY3BK	20.0	20.0	3.6	3.0	4.0	PA66	Black (BK)	–
TY3NT	20.0	20.0	3.6	3.0	4.0	PA66	Natural (NT)	Acrylate
TY8BK	30.0	30.0	4.4	4.0	8.0	PA66	Black (BK)	–
TY8NT	30.0	30.0	4.4	4.0	8.0	PA66	Natural (NT)	Acrylate

All dimensions in mm. Subject to technical changes.

Please Note for Product Specific Approvals please refer to Appendix.

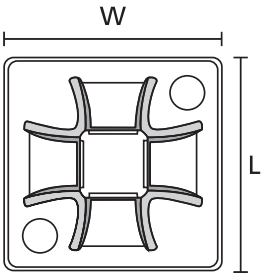
Self Adhesive / Screw Fixing Cable Tie Mounts

Q-mount Series QM

Q-mounts allow a “4-way” entry for Q-ties and are available in a screwable or self adhesive version. Due of the special design of the mounting base, they offer a perfect solution in combination with the Q-tie cable ties. The Q-mount keeps the Q-tie in place during pre-assembly and ensures that the Q-tie does not slip out even in difficult situations, for example vertical mounting positions.



Q-mount QM, 4-way entry, adhesive/screwable.



Mounting Base Q-mount

Synthetic Rubber

Bass Material	PE foam
Temperature range	at least -40°C to 60°C

RoHS

HF (halogenfree)



The Q-mount base locks the Q-tie in vertical positon, your hands are free to apply the cables.

Material Data

Material	Polyamide 6.6 (PA66)
Colour	Natural (NA), Black (BK)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2 (excluding adhesive)

RoHS

HF (halogenfree)

Technical Table

Article-No.	Type	Length (L)	Width (W)	Height (H)	Fixing Hole Ø (FH)	Strap Width max. (G)	Material	Colour	Adhesive
151-10901	**QM20**	20.0	20.0	3.7	3.1	4.0	PA66	Natural (NA)	–
151-10902	**QM30**	30.0	30.0	4.5	4.1	5.1	PA66	Natural (NA)	–
151-10903	**QM40**	40.0	40.0	5.5	4.1	8.4	PA66	Natural (NA)	–
151-10904	**QM20A**	20.0	20.0	3.7	3.1	4.0	PA66	Natural (NA)	Synthetic rubber
151-10905	**QM30A**	30.0	30.0	4.5	4.1	5.1	PA66	Natural (NA)	Synthetic rubber
151-10906	**QM40A**	40.0	40.0	5.5	4.1	8.4	PA66	Natural (NA)	Synthetic rubber
151-10911	**QM20**	20.0	20.0	3.7	3.1	4.0	PA66	Black (BK)	–
151-10912	**QM30**	30.0	30.0	4.5	4.1	5.1	PA66	Black (BK)	–
151-10913	**QM40**	40.0	40.0	5.5	4.1	8.4	PA66	Black (BK)	–
151-10914	**QM20A**	20.0	20.0	3.7	3.1	4.0	PA66	Black (BK)	Synthetic rubber
151-10915	**QM30A**	30.0	30.0	4.5	4.1	5.1	PA66	Black (BK)	Synthetic rubber
151-10916	**QM40A**	40.0	40.0	5.5	4.1	8.4	PA66	Black (BK)	Synthetic rubber

All dimensions in mm. Subject to technical changes.

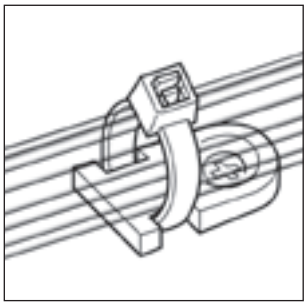
CTAM and CTAP, MB and TY Cable Tie Mounts

Material Data

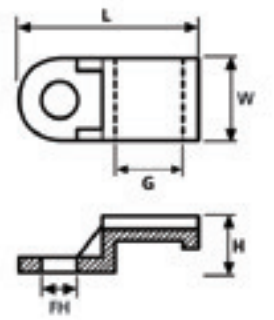
Material	Polyamide 6.6 (PA66)
Colour	Black (BK), Natural (NT)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

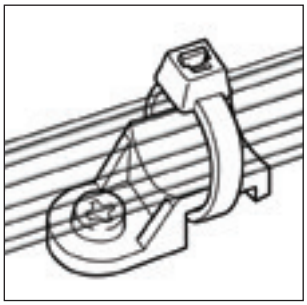
RoHS

HF (halogenfree)

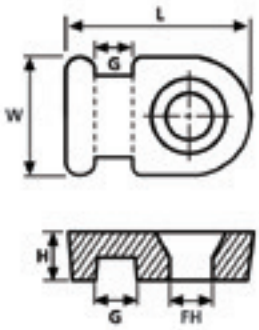


Cable tie mounts MB1/MB2





Cable tie mounts TY3/TY8



Product Selection

Code	Length (L)	Width (W)	Height (H)	Fixing Hole Ø (FH)	Strap Width max. (G)	Material	Colour
MB1	12.5	8.0	3.5	2.9	2.6	PA66	Natural (NT)
MB1	12.5	8.0	3.5	2.9	2.6	PA66	Black (BK)
MB2	20.5	12.5	3.3	5.0	5.0	PA66	Natural (NT)
MB2	20.5	12.5	3.3	5.0	5.0	PA66	Black (BK)
TY3F1	19.0	8.0	5.7	3.5	5.0	PA66	Natural (NT)
TY8F1	22.4	10.0	5.8	4.5	8.0	PA66	Natural (NT)

All dimensions in mm. Subject to technical changes.

* = Width of hole

CTAM and CTAP, MB and TY Cable Tie Mounts

Features and Benefits

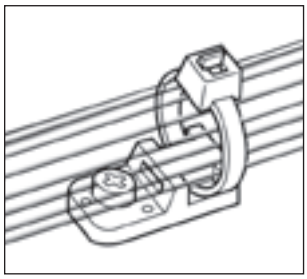
CTAM, MB & TY mounts are particularly suitable for applications with minimal space. They are mounted onto the equipment prior to cable installation as they are installed 'in line' and take up no more space than the cable itself.

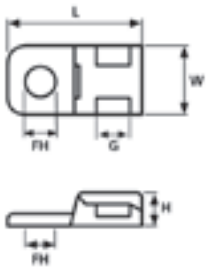
The CTAM has a '4-way' entry design and can be used either 'in line' or at 90°C to the cable run.

The CTAP mounts offer an adjustable 'stand off' feature allowing the cable run to be precisely positioned.

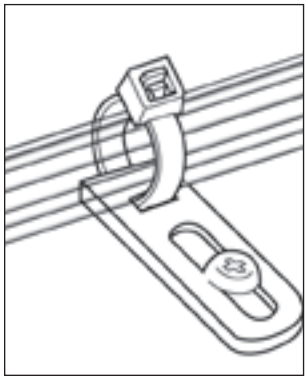
Application

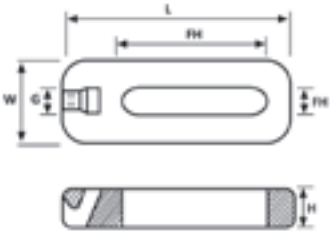
Each of these products offer particular benefits, but all are designed for simple, yet robust, installation in a wide variety of applications. Particularly used in telecoms equipment, switchgear and control cabinets.



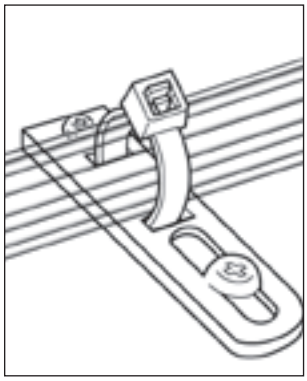


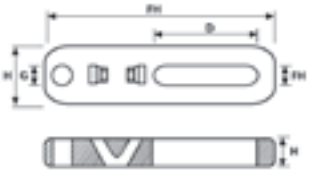
Cable tie mounts CTAM1/CTAM2





Cable tie mounts CTAP1





Cable tie mounts CTAP2

Material Data

Material	Polyamide 6.6 (PA66)
Colour	Natural (NT)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

RoHS

HF (halogenfree)

Product Selection

Code	Length (L)	Width (W)	Height (H)	Fixing Hole Ø (FH)	Strap Width max. (G)	Material	Colour
CTAM1	20.4	10.2	5.1	4.3	4.6	PA66	Natural (NT)
CTAM2	20.4	10.2	5.1	5.2	4.6	PA66	Natural (NT)
CTAP1	34.04	12.70	3.81	5.0* x 19.0	5.0	PA66	White (WH)
CTAP2	54.1	12.7	3.5	5.0* x 19.0	5.0	PA66	Natural (NT)

All dimensions in mm. Subject to technical changes.

* = Width of hole

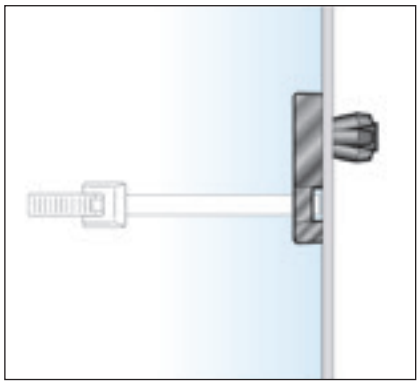
LKC and NY Cable Tie Mounts

Features and Benefits

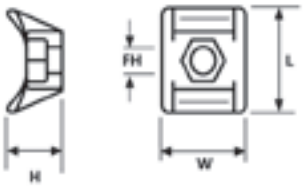
LKC Cable Tie Mounts give additional support to the cable bundles by means of their curved design. Simple to install with a screw or bolt they give excellent security, particularly in areas of high vibration.

Application

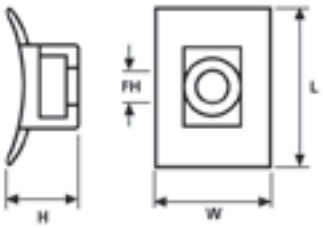
Designed specifically for holding heavier cable bundles these mounting bases can be used in many industries from agriculture to truck manufacture. They offer a very secure fixing and can be used with a wide variety of heavy duty cable ties up to 13mm wide.



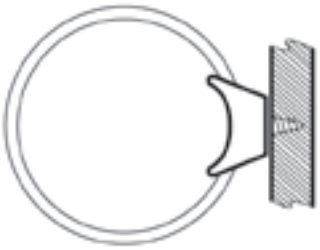
LKCRF1



Cable Tie Mounts NY3256/3343



Cable tie mounts LKC Series



Wall fastening

Material Data

Material	Polyamide 6.6 (PA66)
Colour	Natural (NT), Black (BK)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

RoHS

HF (halogenfree)

Product Selection

Code	Length (L)	Width (W)	Height (H)	Fixing Hole Ø (FH)	Strap Width max. (G)	Material	Colour
LKC	25.0	17.0	13.5	5.5	8.0	PA66	Black (BK)
LKC	25.0	17.0	13.5	5.5	8.0	PA66	Natural (NT)
LKCSF1	40.0	19.0	16.0	6.0	13.0	PA66	Natural (NT)
LKCSF1	40.0	19.0	16.0	6.0	13.0	PA66	Black (BK)
LKCRF1	23.82	11.91	3.99	6.35	4.8	PA66	Black (BK)
LKCRF1	23.82	11.91	3.99	6.35	4.8	PA66	Natural (NT)
NY3256	13.5	12.0	7.8	3.0	8.0	PA66	Natural (NT)
NY3343	16.0	18.0	8.0	3.0	12.0	PA66	Natural (NT)

All dimensions in mm. Subject to technical changes.

Please Note for Product Specific Approvals please refer to Appendix.

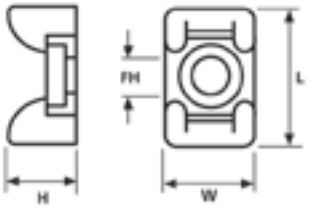
KR Cable Tie Mounts

Features and Benefits

KR mounts give additional support to the cables by means of their curved design. Simple to install with a screw or bolt they give excellent security, particularly in areas of high vibration when used in conjunction with the KR straps. They offer one of the most vibration resistant fixings available.

Application

Designed specifically for holding heavier cable bundles, these mounting bases can be used in many industries from agriculture to truck manufacture. They offer a very secure fixing and can be used with a wide variety of heavy duty cable ties up to 7.6mm wide.



Cable tie mounts KR6G5 and KR8G5

Material Data

Material	Polyamide 6.6 (PA66)
Colour	Natural (NT)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

RoHS HF (halogenfree)

Material Data

Material	Polyamide 6.6 UV-Resistant (PA66W)
Colour	Black (BK)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

RoHS HF (halogenfree)

Material Data

Material	Polyamide 6.6 heat stabilised (PA66HS)
Colour	Black (BK)
Operating Temperature	-40°C to +105°C Continuous, (+145°C for 500 h)
Flammability	UL94 V2

RoHS HF (halogenfree)

Product Selection

Code	Length (L)	Width (W)	Height (H)	Fixing Hole Ø (FH)	Strap Width max. (G)	Material	Colour
KR6G5	18.0	12.0	9.0	4.5	6.0	PA66	Natural (NT)
KR6G5	18.0	12.0	9.0	4.5	6.0	PA66W	Black (BK)
KR6G5	18.0	12.0	9.0	4.5	6.0	PA66	Black (BK)
KR8G5	25.0	14.5	12.0	6.5	8.0	PA66	Natural (NT)
KR8G5	25.0	14.5	12.0	6.5	8.0	PA66HS	Black (BK)

All dimensions in mm. Subject to technical changes.

LKM, CL8 and FH Cable Tie Mounts

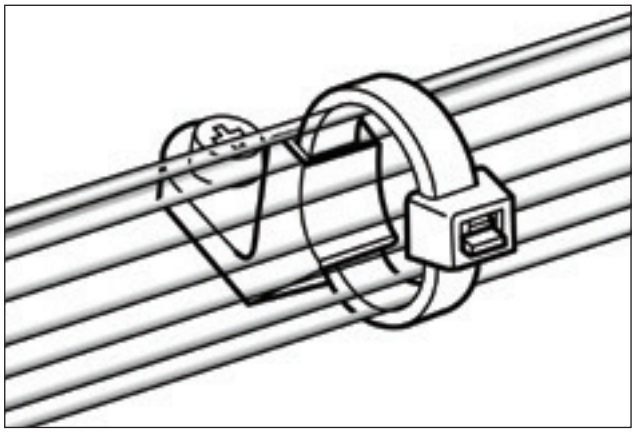
Features and Benefits

With these screwfix mounts it is possible to install the cable sideways. The FH mounts feature a compact design.

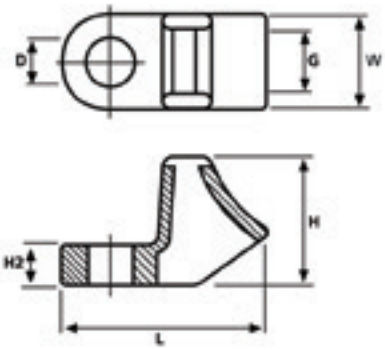
The CL8 mounts are ideal for securing large, heavier, bundles and will accept cable ties up to 8mm wide.

Application

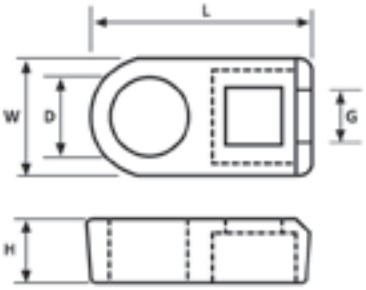
In areas with limited space these mounting bases allow the cable to be offset from the fixing hole, and can be installed in the equipment prior to the cable installation. A major cost saving can be made by using these products as many different sizes of standard cable ties can be used, reducing the need to stock a wide range of specific fixing ties.



LKM Cable tie mounts



LKM Cable tie mounts



FH Cable tie mounts

Material Data

RoHS

Material	Polyamide 6.6 (PA66)
Colour	Natural (NT), Black (BK)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)

Material Data

RoHS

Material	Polyamide 6.6 UV-Resistant (PA66W)
Colour	Black (BK)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)

Product Selection

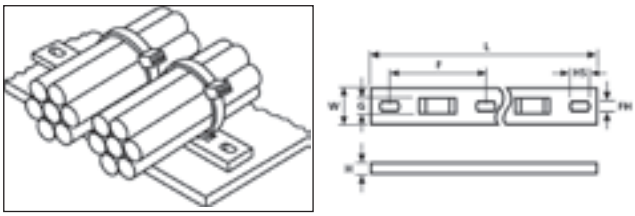
Code	Length (L)	Width (W)	Height (H)	Height (H2)	Fixing Hole Ø (FH)	Strap Width max. (G)	Material	Colour
CL8	27.3	12.5	16.0	5.0	6.5	8.0	PA66	Natural (NT)
CL8	27.3	12.5	16.0	5.0	6.5	8.0	PA66	Black (BK)
CL8	27.3	12.5	16.0	5.0	6.5	8.0	PA66W	Black (BK)
FH18	13.3	7.1	4.0	–	3.7	2.5	PA66	Natural (NT)
FH30	17.9	9.5	4.7	–	5.5	3.5	PA66	Natural (NT)
FH50	22.2	11.3	6.2	–	7.1	4.6	PA66	Natural (NT)
LKM	27.0	12.0	16.0	5.0	6.0	7.6	PA66	Black (BK)
LKM	27.0	12.0	16.0	5.0	6.0	7.6	PA66	Natural (NT)

All dimensions in mm. Subject to technical changes.

Mounting Plates Types MP and MSMP

Features and Benefits

Allowing multiple cables to be run in parallel, these mounting plates are simply fixed by two screws. The cables are attached to the mounting plate by using a cable tie through any combination of the available slots.



Mounting plates types MP and MSMP

Application

Many applications require each cable run to be firmly held in place but separately from adjacent cable runs (example - control cabinets, machinery and military systems). The MP series of mounts help achieve this.

Material Data

Material	Polyamide 6.6 (PA66)
Colour	Natural (NT)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

RoHS

HF (halogenfree)

Product Selection

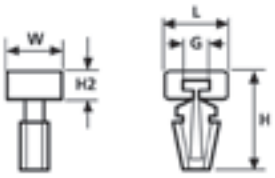
Code	Length (L)	Width (W)	Height (H)	Fixing Hole Ø (FH)	Fixing Hole Centers (F)	Hole Size (HS)	Strap Width max. (G)	Material	No. of bundles
MP2M3	76.2	12.7	3.2	3.5	31.8	6.4	5.2	PA66	2
MP3M3	108.0	12.7	3.2	3.7	31.8	6.4	5.2	PA66	3
MP4M3	139.8	12.7	3.2	3.7	31.8	6.4	5.2	PA66	4
MSMP4	167.0	15.9	5.2	5.1	19.05	7.6	8.2	PA66	4
MP5M3	171.6	12.7	3.2	3.7	31.8	6.4	5.2	PA66	5
MSMP5	204.0	15.7	5.3	5.1	38	7.7	8.2	PA66	5
MSMP6	242.0	15.7	5.3	5.1	38	7.7	8.2	PA66	6

All dimensions in mm. Subject to technical changes.

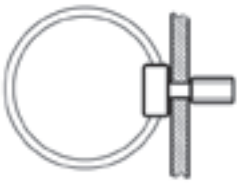
Cable Fixing Accessory TM1SF

Features and Benefits

The TM1SF mount is ideal for applications with restricted access, or where space saving is required. The arrowhead simply pushes into a pre-drilled or pre-punched hole giving a very secure fixing.



TM1SF Fixing base



TM1SF Fixing base

Product Selection

Code	Length (L)	Width (W)	Height (H)	Height (H2)	Fixing Hole Ø (FH)	Panel Thickness max.	Strap Width max. (G)	Material	Colour
TM1SF	10.2	7.6	15.6	4.6	6.3	3.4	5.2	PA66	Natural (NT)

All dimensions in mm. Subject to technical changes.

Please Note for Product Specific Approvals please refer to Appendix.

SFC Arrowhead Cradle

Features and Benefits

Arrowhead fixing for use in pre-drilled or punched holes. Provides secure cradle for use with HellermannTyton cable ties. SFC and SFC2 for ties up to 4.8mm width. SFC3 will accept ties up to 8mm width.

Application

Offering simple and easy methods of securing cables or pipes these fixing accessories have many applications within a wide range of industries.



SFC



SFC2



SFC3

Material Data

Material	Polyamide 6.6 (PA66)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

RoHS

HF (halogenfree)

Product Selection

Code	Length (L)	Width (W)	Fixing Hole Ø (FH)	Panel Thickness min.	Panel Thickness max.	Material	Colour
SFC	18.0	11.0	6.0	–	3.2	PA66	Natural (NT)
SFC2	14,5	6.0	6.0	–	1.0	PA66	Natural (NT)
SFC3	7.3	22.0	6.3	0.8	1.8	PA66	Natural (NT)
SFC3	7.3	22.0	6.3	0.8	1.8	PA66	Black (BK)

All dimensions in mm. Subject to technical changes.

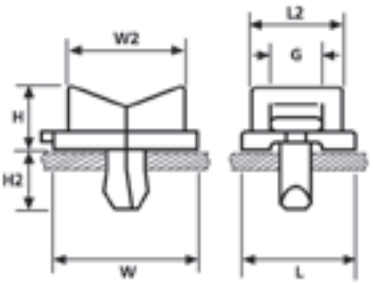
TY5 Rivet Mount

Features and Benefits

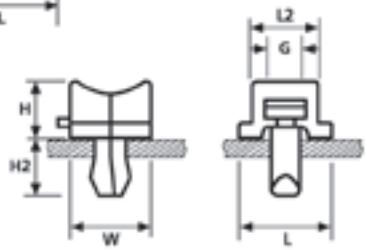
Quick installation is one of the key features of the TY mounts. Consisting of a two piece 'wedge' the fixing is easily inserted using special tools. The special 'diagonal' design of the fixing guarantees a secure installation at all times. Once installed the TY mounts offer a firm fixing for a wide variety of cable ties.

Application

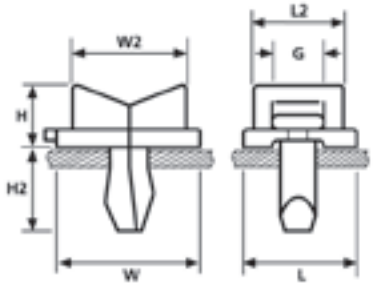
The TY Fixings are ideal for use where a high pull out force is required (e.g. in the aircraft industry). The two piece 'wedge' ensures that once installed the mounts will not come away from the panel. Particularly designed for areas with restricted access.



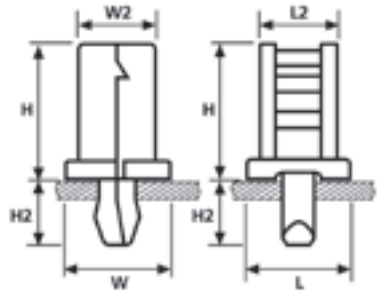
TY5K3/5 Rivet mount



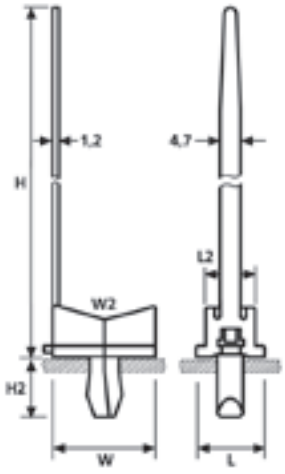
TY5K2 Rivet mount



TY5K3 Rivet mount



TY5K1 Rivet mount



TY5K4 Rivet mount

Material Data

RoHS

Material	Polyamide 6.6 heat stabilised (PA66HS)
Colour	Natural (NT)
Operating Temperature	-40°C to +105°C Continuous, (+145°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)

Technical Table

Code	Length (L)	Length (L2)	Width (W)	Width (W2)	Height (H)	Height (H2)	Strap Width max (FH)	Fixing Hole Ø (FH)	Panel Thickness min.	Panel Thickness max.	Material	Colour	Appli-cation Tool
TY5K1**	15.0	11.0	14.8	10.8	18.3	9.5	5.5	5.0-5.3	1.0	3.0	PA66HS	Natural (NT)	TY5K1/I
TY5K2	14.0	10.0	12.0	–	7.8	9.5	5.5	4.9-5.3	1.0	5.0	PA66HS	Natural (NT)	TY5K1/I
TY5K3	18.0	14.0	22.0	17.0	10.0	12.5	9.3	5.9-6.4	2.0	8.0	PA66HS	Natural (NT)	TY5K1/I
TY5K3/5	18.0	14.0	22.0	17.0	10.0	9.5	9.3	4.9-5.3	1.0	5.0	PA66HS	Natural (NT)	TY5K1/I
TY5K4	14.0	10.0	22.0	–	175.0	12.5	–	5.9-6.4	2.0	8.0	PA66HS	Natural (NT)	–

All dimensions in mm. Subject to technical changes.

**Norm NSA 935513-05

WPC - Wire Push In Clips

Features and Benefits

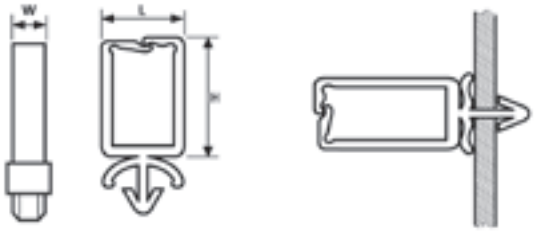
The shape of the clips ensures that they can accept either single or multiple cables, whilst the design of the cable entry allows cables to be simply pushed into place. The self-locking feature ensures that once inside the clip the wires cannot be removed accidentally. The arrowhead design of fixing ensures simple and secure installation and only needs access to the panel from one side.



WPC - Wire Push in clip.

Application

With the increased complexity of electronic and electrical installations the use of the WPC clips enable cables to be installed using the minimum amount of space, a typical application would be in the frames/rails of control cabinets.



WPC5-20 - Wire Push in clip

Technical Table

Type	Length (L)	Width (W)	Height (H)	Fixing Hole Ø (FH)	Panel Thickness min.	Panel Thickness max.
WPC5	15.0	5.25	12.7	4.75	0.8	4.0
WPC10	15.0	5.25	17.7	4.75	0.8	4.0
WPC15	15.0	5.25	22.7	4.75	0.8	4.0
WPC20	15.0	5.25	27.7	4.75	0.8	4.0

All dimensions in mm. Subject to technical changes.

Material Data

Material	Polyamide 6.6 (PA66)
Colour	Natural (NT)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

RoHS

HF (halogenfree)

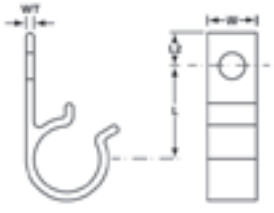
Screw Mount D-Clip

Features and Benefits

Screwed D-clips are available in 3 sizes and guarantee time and cost saving by simply pressing the cable into the holder. The flexible grip means that later removal or replacement of cables and pipes is possible. Three different bore diameters for fixing the holder are available.



The clip is held in place by a screw and the bundled cable or pipe is guided securely.



D-Clip

Technical Table

Code	Length (L)	Length (L2)	Width (W)	Wall (WT)	Fixing Hole Ø (FH)	Bundle Ø max.
4D10	17.0	8.0	15.0	2.0	4.0	10.0
4D15	25.0	10.0	15.0	2.0	4.0	15.0
4D20	28.0	10.0	15.0	2.5	4.0	20.0
6D10	17.0	8.0	15.0	2.0	6.0	10.0
6D15	25.0	10.0	15.0	2.0	6.0	15.0
6D20	28.0	10.0	15.0	2.5	6.0	20.0
8D10	17.0	8.0	15.0	2.0	8.0	10.0
8D15	25.0	10.0	15.0	2.0	8.0	15.0
8D20	28.0	10.0	15.0	2.5	8.0	20.0

All dimensions in mm. Subject to technical changes.

Material Data

Material	Polyacetal (POM)
Colour	Black (BK)
Operating Temperature	-40°C to +90°C Continuous, (+110°C for 500 h)
Flammability	UL94 HB

RoHS

LOK Fixing Base

Features and Benefits

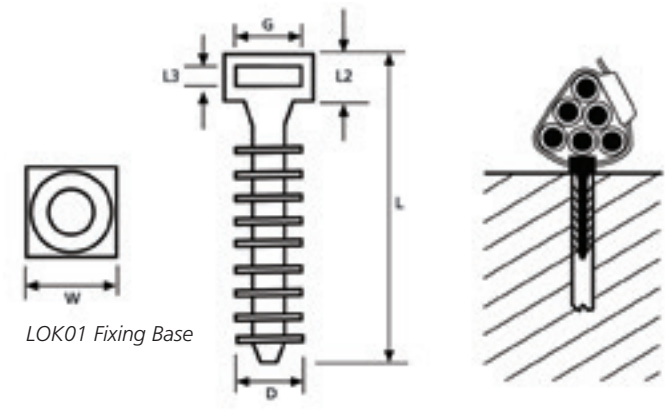
The LOK01 - LOK05 were primarily designed to be used with the RPE and PE series of cable ties but will function just as well with any cable ties up to 9mm wide.

Suitable for use in a wide range of materials including, concrete, brick, block or wood.

Installed by knocking into a 7mm or 8mm diameter hole (depending on the material). The LOK01B is designed for soft brickwork and 6mm holes. Because of its elongated head, the bundles can be located at a distance from the brickwork with the LOK05.

Application

The LOK mounts, in conjunction with a cable tie can be used either indoors or outdoors for a diverse range of applications from holding climbing plants, to securing cables running between buildings.



LOK01 Fixing Base

Material Data

RoHS

Material	Polyamide 6.6 (PA66)
Colour	Black (BK)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)

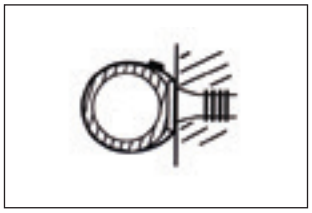
Technical Table

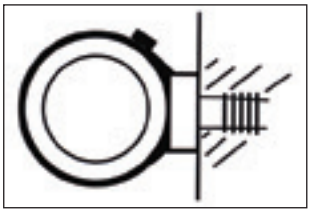
Code	Length (L)	Length (L2)	Length (L3)	Width (W)	Ø D	Strap Width max. (G)	Fixing Hole Ø (FH)
LOK01	44.0	6.5	2.5	12.0	9.2	9.0	7.0-8.0
LOK01B	30.0	6.5	2.5	12.0	7.2	9.0	6.0
LOK01S	34.0	6.5	2.5	12.0	9.2	9.0	7.0-8.0
LOK05	49.0	12.5	2.5	12.0	9.2	9.0	7.0-8.0

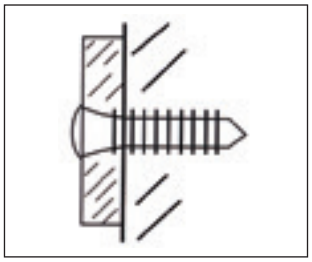
All dimensions in mm. Subject to technical changes.

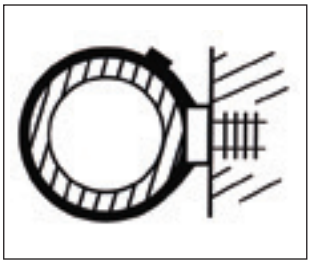
EasyHold Fastening Systems

- Standard colours: Black / White.
- Suited for fixing cables and pipes up to 100mm diameter.
- Can withstand a pull out force of up to 100kg.
- Easy installation: drill the recommended hole size, hammer the Easyhold plug into place and easily secure cable or pipe with suitable cable tie.
  Note: Black is UV stabilised, White is for use indoors.
- Suitable for use by Electricians, Plumbers and DIY.
- SABS tests available upon request.
- Manufactured from super-tough nylon.


EasyHold miniplugs


EasyHold plugs


EasyHold anchors


EasyHold maxiplugs

Technical Table

Code	Diameter (mm)	Drill Size (mm)	Cable Tie	Pull-out Force
EH1$5	5mm	5mm	T18R (104 x 2.5mm)	Mini fixing applications
EH1$6	6mm	6-7mm	T30R (150 x 3.5mm)	Mini fixing applications
EH1$8	8mm	8mm	T50R (205 x 4.7mm)	100kg
EH1$10	10mm	10mm	T120R (395 x 7.8mm)	100kg

All dimensions in mm. Subject to technical changes.

Cable Fixing Accessories Tape Clip, COW Series and CH Series

Features and Benefits

The simple design of CH20 clips makes them both versatile and easy to install. The COW clips can be used as a conventional tape-on clip or assembled with a cable tie to fix the harness in place. They can be purchased separately or ready assembled. The COW clips can be used as a conventional tape-on clip or assembled with a cable tie to fix the harness in place. They can be purchased separately or ready assembled.

Application

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

Material Data

RoHS

Material	Polyamide 6.6 (PA66)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

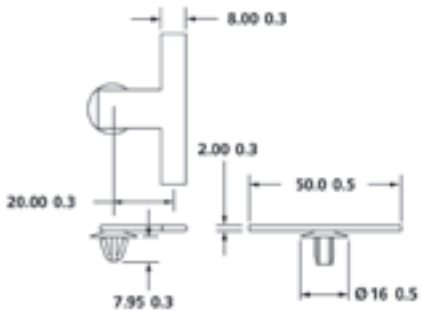
HF (halogenfree)

Material Data

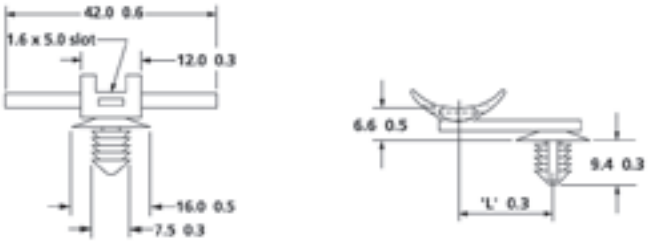
RoHS

Material	Polyamide 6.6 heat stabilised (PA66HS)
Operating Temperature	-40°C to +105°C Continuous, (+145°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)



CH Series



COW Clip



COW Clip

Product Selection

Code	Fixing Hole Ø (FH)	Panel Thickness min.	Panel Thickness max.	Material	Colour
CHA1	6.3-7.0	0.5	1.2	PA66HS	Black (BK)
CHA2	6.5-7.0	0.8	2.0	PA66	Black (BK)
TC2FT6LG	6.3-7.0	0.6	5.1	PA66HIRHS	Black (BK)
TC5FT6S	6.5-7.0	0.75	1.5	PA66HIRHS	Black (BK)
CHDP66	6.6	0.8	4.5	PA66	Black (BK)

All dimensions in mm. Subject to technical changes.

Cable Fixing Accessories Tape Clip, TC and CH Series

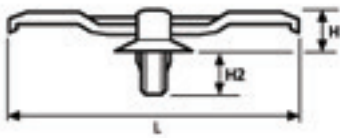
Features and Benefits

Various TapeClips have been developed especially for banding of cables and cable looms. The cable looms are fastened onto the winding bar by means of twine, adhesive tape or cable ties.

The various fixing types allow the use in a wide variety of metal plates and hole diameters. The base of the CHA holder can be moved along the axis in order to equalise tolerances. The TapeClip CHDP66 is noted for its vertical winder bar, which means that 2 leads or cable bundles can be run in parallel.

Application

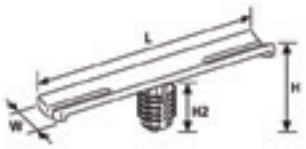
Originally designed for the automotive industry, these clips offer simple and easy methods of securing cable hoses or pipes. They have many applications within a wide range of industries.



TapeClip CHA1



TapeClip CHA2



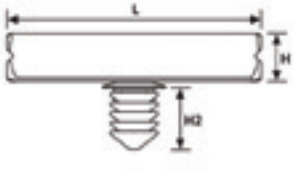
TapeClip TC2FT6LG



TapeClip TC5FT6S



TapeClip CHDP66



TapeClip CHDP66

Material Data

Material	Polyamide 6.6 high impact modified, heat stabilised (PA66HIRHS)
Colour	Black (BK)
Operating Temperature	40°C to +105°C
Flammability	UL94 HB

Material Data

Material	Polyamide 6.6 (PA66)
Colour	Black (BK)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)

Material Data

Material	Polyamide 6.6 heat stabilised (PA66HS)
Colour	Black (BK)
Operating Temperature	-40°C to +105°C Continuous, (+145°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)

Technical Table

Code	Length (L)	Width (W)	Height (H)	Height (H2)	Fixing Hole Ø (FH)	Panel Thickness min.	Panel Thickness max.	Material	Colour
CHA1	54.0	6.0	7.7	8.2	6.3-7.0	0.5	1.2	PA66HS	Black (BK)
CHA2	54.0	6.0	7.7	8.0	6.5-7.0	0.8	2.0	PA66	Black (BK)
TC2FT6LG	55.0	9.0	12.5	11.0	6.3-7.0	0.6	5.1	PA66HIRHS	Black (BK)
TC5FT6S	37.0	8.0	8.2	5.0	6.5-7.0	0.75	1.5	PA66HIRHS	Black (BK)
CHDP66	40.0	10.0	8.5	9.7	6.6	0.8	4.5	PA66	Black (BK)

All dimensions in mm. Subject to technical changes.

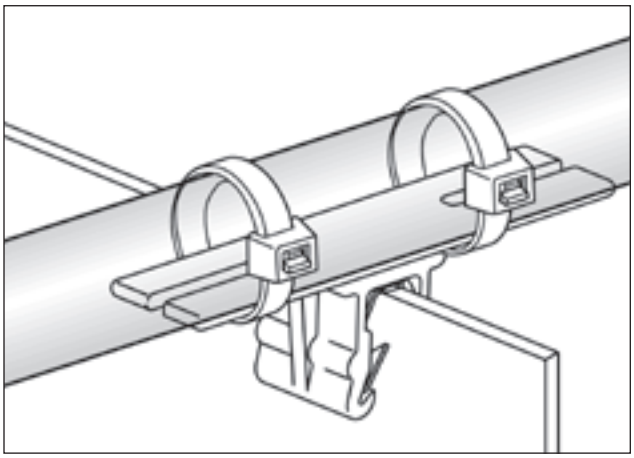
Cable Fixing Accessories Edge Clip

Features and Benefits

Edge Clip mounting solutions stand out for the ease with which they can be fitted. They are installed simply by pressing onto a plastic or metal edge. EC7 cables and leads can be located by simply laying them into the holder. EC14 to EC17 cables can be fastened to the cable bundle by using a cable tie or adhesive tape.

Application

These elements are used, for example, in the automotive industry and electrical industry and wherever it is impossible to drill holes or no other fixing points are available.



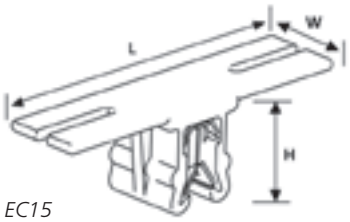
Cables and leads can be fastened with a cable tie or adhesive tape to the bars of the mounting element.

Material Data

RoHS

Material	Polyamide 6.6 high impact modified, heat stabilised (PA66HIRHS)
Colour	Black (BK)
Operating Temperature	-40°C to +105°C
Flammability	UL94 HB

HF (halogenfree)



EC15

Technical Table

Code	Length (L)	Width (W)	Height (H)	Bundle Ø max.	Panel Thickness min.	Panel Thickness max.	Drawing
EC7	24.4	10.0	–	13.5	1.0	3.0	
EC14	40.0	10.0	12.4	–	1.0	3.0	
EC15	40.0	10.0	12.4	–	1.0	3.0	
EC16	40.0	10.0	13.0	–	1.0	3.0	
EC17	46.5	10.0	13.0	–	1.0	3.0	

All dimensions in mm. Subject to technical changes.

Aluminium P-Clips

ALU-P-Clip with / without chloroprene Insert

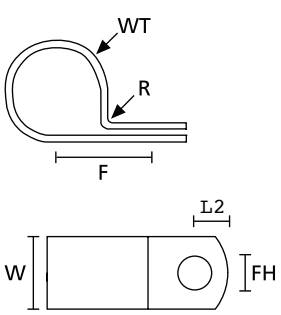
Manufactured from a high quality aluminium these P-Clips provide flexibility and yet give a permanent fixing in the most arduous of environments. The addition of a Chloroprene insert provides the cable or pipe bundle with a high degree of protection against vibration, reduces noise and also offers electrical isolation.



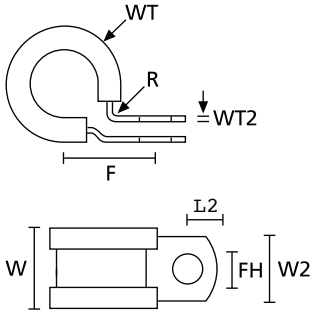
P-Clips manufactured in polyamide, aluminium or aluminium with a chloroprene insert.

Features and Benefits

- Simple, secure pipe or cable fixing (e. g. caravan construction).
- Combine with chloroprene insert for vibration resistance (e. g. retain capacitors on PCB).
- Ideal for use in high temperatures.
- Suitable for applications needing strength of metal components.
- Easy label design with TagPrint Pro.



Aluminium P-clips



Aluminium P-clips with a chloroprene insert

Technical Table

TYPE	Width (W)	Width (W2)	Wall (WT)	Wall (WT2)	Hole Ø (FH)	Bundle Ø max.	Fixing Holes (F2)	Radius (R)	Material	Colour	Article-No.
AULU4	12.7	-	0.80	-	5.2	6.5	11.6	1.6	AL	Natural (NA)	211-10040
ALU5	12.7	-	0.80	-	5.2	8.0	12.6	1.6	AL	Natural (NA)	211-10050
ALU6	12.7	-	0.80	-	5.2	9.5	13.4	1.6	AL	Natural (NA)	211-10060
ALU7	12.7	-	0.80	-	5.2	11.1	14.2	1.6	AL	Natural (NA)	211-10070
ALU8	12.7	-	0.80	-	5.2	12.7	15.0	1.6	AL	Natural (NA)	211-10080
ALU10	12.7	-	0.80	-	5.2	15.9	16.6	1.6	AL	Natural (NA)	211-10100
ALU11	12.7	-	1.30	-	5.2	17.5	19.1	2.8	AL	Natural (NA)	211-10110
ALU12	12.7	-	1.30	-	5.2	19.1	19.9	2.8	AL	Natural (NA)	211-10120
ALU13	12.7	-	1.30	-	5.2	20.6	20.7	2.8	AL	Natural (NA)	211-10130
ALU4C	16.3	12.7	3.70	0.8	5.2	3.2	11.6	1.6	AL, CR	Black (BK)	211-15040
ALU5C	16.3	12.7	3.70	0.8	5.2	4.8	12.6	1.6	AL, CR	Black (BK)	211-15050
ALU6C	16.3	12.7	3.70	0.8	5.2	6.4	13.4	1.6	AL, CR	Black (BK)	211-15060
ALU7C	16.3	12.7	3.70	0.8	5.2	8.0	14.2	1.6	AL, CR	Black (BK)	211-15070
ALU8C	16.3	12.7	3.70	0.8	5.2	9.5	15.0	1.6	AL, CR	Black (BK)	211-15080
ALU9C	16.3	12.7	3.70	0.8	5.2	11.1	15.8	1.6	AL, CR	Black (BK)	211-15090
ALU10C	16.3	12.7	3.70	0.8	5.2	12.7	16.6	1.6	AL, CR	Black (BK)	211-15100

All dimensions in mm. Subject to technical changes.

Aluminium P-Clips

ALU-P-Clip with / without chloroprene Insert

Technical Table

TYPE	Width (W)	Width (W2)	Wall (WT)	Wall (WT2)	Hole Ø (FH)	Bundle Ø max.	Fixing Holes Centres (F2)	Radius (R)	Material	Colour	Article-No.
ALU12C	16.3	12.7	4.50	1.3	5.2 1	5.9	19.9	2.8	AL, CR	Black (BK)	211-15120
ALU13C	16.3	12.7	4.50	1.3	5.2	17.5	20.7	2.8	AL, CR	Black (BK)	211-15130
ALU14C	16.3	12.7	4.50	1.3	5.2	19.1	21.5	2.8	AL, CR	Black (BK)	211-15140
ALU15C	16.3	12.7	4.50	1.3	5.2	20.6	22.3	2.8	AL, CR	Black (BK)	211-15150
ALU16C	16.3	12.7	4.50	1.3	5.2	22.2	23.1	2.8	AL, CR	Black (BK)	211-15160
ALU17C	16.3	12.7	4.50	1.3	5.2	23.8	23.9	2.8	AL, CR	Black (BK)	211-15170
ALU18C	16.3	12.7	4.50	1.3	5.2	25.4	24.6	2.8	AL, CR	Black (BK)	211-15180
ALU19C	16.3	12.7	4.50	1.3	5.2	27.0	25.5	2.8	AL, CR	Black (BK)	211-15190
ALU20C	16.3	12.7	4.50	1.6	5.2	28.6	27.0	3.2	AL, CR	Black (BK)	211-15200
ALU22C	16.3	12.7	4.50	1.6	5.2	31.8	28.6	3.2	AL, CR	Black (BK)	211-15220
ALU23C	16.3	12.7	4.50	1.6	5.2	33.3	29.4	3.2	AL, CR	Black (BK)	211-15230
ALU25C	16.3	12.7	4.50	1.6	5.2	36.5	30.8	3.2	AL, CR	Black (BK)	211-15250
ALU26C	16.3	12.7	4.50	1.6	5.2	38.1	31.7	3.2	AL, CR	Black (BK)	211-15260
ALU28C	16.3	12.7	4.50	1.6	5.2	41.3	33.3	3.2	AL, CR	Black (BK)	211-15280
ALU29C	16.3	12.7	4.50	1.6	5.2	42.9	34.1	3.2	AL, CR	Black (BK)	211-15290
ALU30C	16.3	12.7	4.50	1.6	5.2	44.5	34.9	3.2	AL, CR	Black (BK)	211-15300
ALU34C	16.3	12.7	4.50	1.6	5.2	50.8	38.1	3.2	AL, CR	Black (BK)	211-15340
ALU24C	16.3	12.7	4.50	1.6	5.2	34.9	30.2	3.2	AL, CR	Black (BK)	211-15240

All dimensions in mm. Subject to technical changes.

HP & NX Plastic P-Clips

Features and Benefits

Manufactured from nylon these P-Clips offer good temperature resistance as well as offering high strength. A feature of the NX clips is their versatility to accept cables of differing sizes through the use of a range of fixing holes - this feature enables users to minimise stock holding of a large range of clips.

Application

For permanent, or semi-permanent cable fixings this range of P-Clips can be used in many industries. Their light weight makes them particularly suitable for use in areas such as aircraft and aerospace where minimising weight, but retaining a strong fixing, is vitally important.

Material Data

RoHS

Material	Polyamide 6.6 (PA66)
Colour	Natural (NT), Black (BK)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)



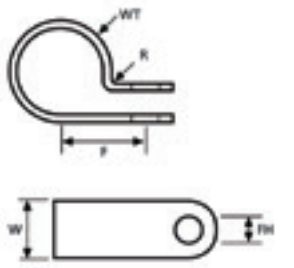
P-Clip NX.

Material Data

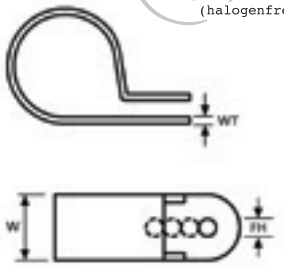
RoHS

Material	Polyamide 6.6 heat stabilised (PA66HS)
Colour	Black (BK)
Operating Temperature	-40°C to +105°C Continuous, (+145°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)



P-Clip H1P-H18P



P-Clip NX8-14

Technical Table

Code	Type	Width (W)	Wall (WT)	Fixing Hole Ø (FH)	Bundle Ø max.	Fixing Hole Centres (F)	Radius (R)	Material	Colour
*NX0	H1P	10.0	0.8	4.2	3.2	8.5	0.5	PA66HS	Black (BK)
*NX1	H2P	10.0	1.0	4.2	5.0	9.5	1.0	PA66HS	Black (BK)
*NX2	H3P	10.0	1.0	4.2	6.5	10.0	1.0	PA66HS	Black (BK)
*NX3	H4P	10.0	1.2	4.2	8.0	10.0	1.0	PA66HS	Black (BK)
*NX3	H4P	10.0	1.2	4.2	8.0	10.0	1.0	PA66	Natural (NT)
*NX4	H5P	10.0	1.2	4.2	9.5	11.0	1.0	PA66HS	Black (BK)
*NX5	H6P	10.0	1.2	4.2	11.0	13.0	1.0	PA66HS	Black (BK)
*NX6	H7P	10.0	1.2	4.2	12.5	14.0	1.5	PA66HS	Black (BK)
*NX8	NX8	10.0	13	4.2	12.5	14.0	1.5	PA66	Black (BK)
*NX11	NX11	12.6	1.3	4.2	20.0	14.0	1.5	PA66	Black (BK)
	H1P	10.0	0.8	4.2	3.2	8.5	0.5	PA66	Natural (NT), Black (BK)
	H2P	10.0	1.0	4.2	5.0	9.5	1.0	PA66	–
	H3P	10.0	1.0	4.2	6.5	10.0	1.0	PA66	Natural (NT)
	H5P	10.0	1.2	4.2	9.5	11.0	1.0	PA66	Natural (NT)
	H6P	10.0	1.2	4.2	11.0	13.0	1.0	PA66	Natural (NT)
	H7P	10.0	1.2	4.2	12.5	14.0	1.5	PA66	Natural (NT)
	H8P	10.0	1.5	4.2	14.0	15.0	1.5	PA66HS	Black (BK)
	H8P	10.0	1.5	4.2	14.0	15.0	1.5	PA66	Natural (NT)
	H9P	10.0	15	4.2	16.0	16.0	1.5	PA66	Natural (NT)
	H10P	10.0	1.5	4.2	17.5	17.0	1.5	PA66	Natural (NT)
	H11P	10.0	1.5	4.2	19.0	18.0	2.0	PA66	Natural (NT)
	H12P	10.0	1.5	4.2	20.5	19.0	2.0	PA66	Natural (NT)
	H13P	12.0	1.5	5.2	22.0	20.5	2.0	PA66	Natural (NT)
	H14P	12.0	1.5	5.2	24.0	21.5	2.0	PA66	Natural (NT)
	H15P	12.0	1.5	5.2	25.5	23.0	2.5	PA66	Natural (NT)
	H16P	12.0	1.5	5.2	28.5	24.0	2.5	PA66	Natural (NT)
	H17P	12.0	1.5	5.2	31.5	26.0	2.5	PA66	Natural (NT)
	H18P	12.0	1.5	5.2	35.0	27.5	2.5	PA66	Natural (NT)

All dimensions in mm. Subject to technical changes.

*** Local Product**

Standard Colour - Black (BK) / Natural (NT) on request

Klam-Bush (KB)

Features and Benefits

Acting as both a bush to protect the cable and a stress relief to avoid pulling the wires from their connections the KB range are simple to install using just 1 screw.

Material Data

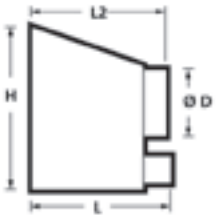
Material	Polyamide 6.6 (PA66)
Colour	Black (BK)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

RoHS

HF (halogenfree)

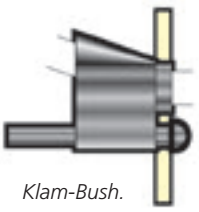


Klam-Bush - ideal for domestic appliances.



Klam-Bush.





Klam-Bush.

Technical Table

Code	Fixing Hole Centres (F)	Ø D	Fixing Hole Ø (FH)	Height (H)	Length (L2)	Length (L)	Width (W)	Bundle Ø min.	Bundle Ø min.	Material Shortcut
KB1	12.7	9.5	5.3	27.0	18.6	20.3	10.7	3.8	6.0	PA66
KB2	12.7	12.6	5.3	31.1	26.4	26.4	14.3	6.0	8.5	PA66
KB3	15.7	15.8	5.3	38.5	26.4	26.4	17.5	8.0	10.5	PA66
KB4	15.9	19.0	5.3	42.0	31.0	31.0	20.9	10.0	15.0	PA66

All Dimensions in mm. Subject to technical changes.

TriKlamp

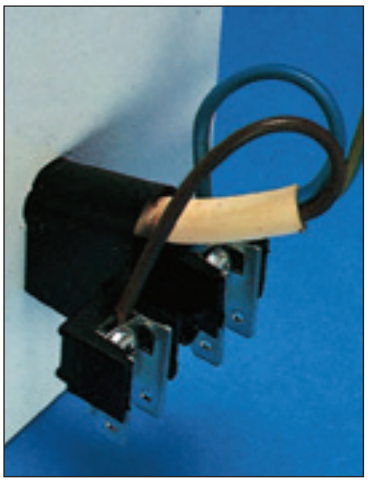
Features and Benefits

Acting as a bush to protect the cable, a stress relief to avoid pulling the wires from their connections and the possibility to terminate the cables, the TK cable restraints are simple to install using just one screw.

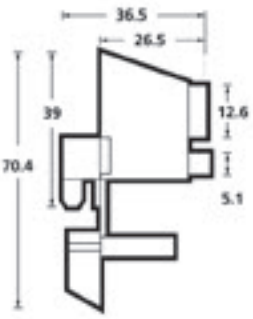
Technical Table

Code	Length (L)	Width (W)	Fixing Hole Ø (FH)	Bundle Ø min.	Material Shortcut
TK2	70.4	36.5	5.1	6.0	PA66

All dimensions in mm. Subject to technical changes.



TriKlamp - Cable restraint and termination in one.





TriKlamp

Special Purpose Fixings

	Page
TY Plastic Rivets	2/92
CTC Convoluted Tubing Clamps	2/93
Pipe and Hose Clips - PC Series	2/94
SBH, SBF and CTMS Cable Tie Base for Weld Studs	2/95
Automatic Harness Clips	2/96
Pipe and Hose Clips - IPC Series	2/97



TY Plastic Rivets

Features and Benefits

Moulded in one piece and simply applied by pushing the pin into the body of the rivet. Two types are available: the TY3PI and TY8PI pins are inserted by means of a rivet placement tool whilst the TY8P2 types have a 'mushroom' head which allows the pin to be simply hammered in.

Application

These simple-to-use plastic rivets are ideal for improving productivity in the working environment, saving time and money over more conventional jointing methods. Ideal for joining panels, or components to panels in a wide range of industries from 'automotive' to 'panel building'.



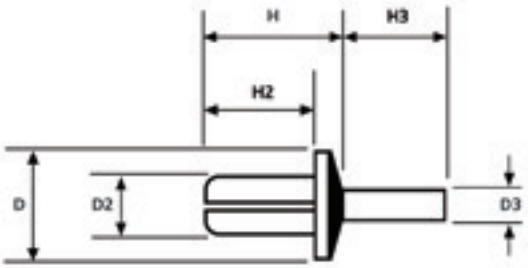
Plastic rivets TY8P1.

Material Data

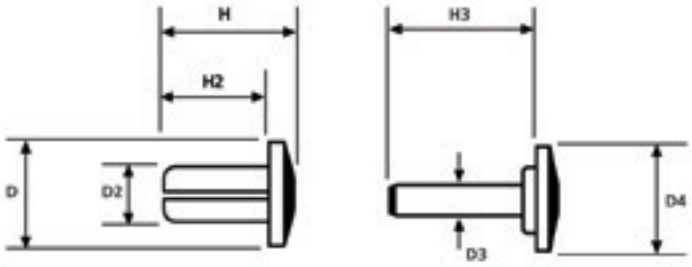
Material	Polyamide 6.6 (PA66)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

RoHS

HF (halogenfree)



Plastic rivets TY3P1/8P1



Plastic rivets TY8P2

Technical Table

Code	Height (H)	Height (H2)	Height (H3)	Ø D	Ø D2	Ø D3	Ø D4	Material	Colour
TY3P1	7.5	6.0	5.3	6.0	3.0	1.7	–	PA66	Black (BK)
TY3P1	7.5	6.0	5.3	6.0	3.0	1.7	–	PA66	Natural (NT)
TY8P1	10.0	8.0	7.5	8.0	4.0	2.6	–	PA66	Black (BK)
TY8P1	10.0	8.0	7.5	8.0	4.0	2.6	–	PA66	Natural (NT)
TY8P2*	10.0	8.0	11.5	8.0	4.0	2.6	8.0	PA66	Black (BK)
TY8P2*	10.0	8.0	11.5	8.0	4.0	2.6	8.0	PA66	Natural (NT)

All dimensions in mm. Subject to technical changes.

*TY8P2 consist of two unattached parts.

CTC Convoluted Tubing Clamp

Features and Benefits

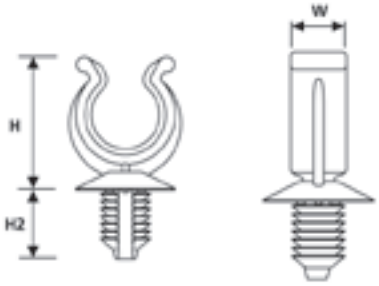
The clamps for corrugated tubing are available in various nominal diameters and have a base in the shape of a fir tree for inserting in a drilled hole. Due to the individual fins, the clamp can be inserted into blind holes with threading. The corrugated tubing is snapped into the clamp where it is securely held. The rib on the inside of the bracket fits into the profile of the tubing and prevents the tubing from slipping.



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

Application

CTC clamps are used for example in the automobile, harness making, electrical industry and wherever corrugated tubing has to be quickly and firmly fixed.



CTC10FT6LG

Material Data

Material	Polyamide 6.6 high impact modified, Heat Stabilised (PA66HIRHS)
Colour	Black (BK)
Operating Temperature	-40°C to +105°C
Flammability	UL94 HB

Technical Table

Code	Width (W)	Height (H)	Height (H2)	Normal Ø	Disc Ø	Fixing Hole Ø (FH)	Panel Thickness min.	Panel Thickness max.	For Convoluted Tubing
CTC4.5FT6LG	8.0	16.1	11.1	4.5	16.0	6.5-7.0	0.75	6.0	IWS 4,5
CTC7.5FT6LG	8.0	18.6	11.1	7.5	16.0	6.5-7.0	0.75	6.0	IWS 7,5-8,5
CTC7.5FT9	8.0	19.9	12.2	7.5	23.0	8.7-9.0	3.0	5.0	IWS 7,5-8,5
CTC10FT6	8.0	21.4	7.5	10.0	16.0	6.5-7.0	0.75	3.0	IWS 8,5-13
CTC10FT6LG	8.0	21.4	11.1	10.0	16.0	6.5-7.0	0.75	6.0	IWS 8,5-13
CTC10FT9	8.0	22.7	12.2	10.0	23.0	8.7-9.0	3.0	5.0	IWS 8,5-13
CTC13FT6	8.0	25.2	7.5	13.0	16.0	6.5-7.0	0.75	3.0	IWS 10-17
CTC13FT6LG	8.0	25.2	11.1	13.0	16.0	6.5-7.0	0.75	6.0	IWS 10-17
CTC22FT9	8.0	37.7	12.2	22.0	23.0	8.7-9.0	3.0	5.0	IWS 19-29

All dimensions in mm. Subject to technical changes.

Pipe and Hose Clips - PC Series

Features and Benefits

These clips can be attached to the panel prior to installing the pipe or hose, simply push the pipe into the clip for a firm and secure fixing.

Application

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

Material Data

RoHS

Material	Polyamide 6.6 (PA66)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)

Material Data

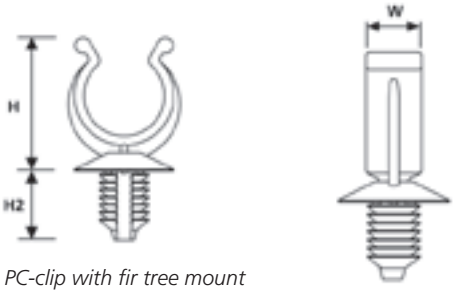
RoHS

Material	Polyamide 4.6 (PA46)
Operating Temperature	-40°C to +150°C for 5000 h, (+195°C for 500 h)
Flammability	UL94 V2

LFH (Limited Fire Hazard)



Simple and secure installation of pipes or hoses to panels.



PC-clip with fir tree mount

Technical Table

Code	Width (W)	Height (H)	Height (H2)	Disc Ø	Bundle Ø max.	Fixing Hole Ø max.	Panel Thickness min.	Panel Thickness max.	Material	Colour	Drawing
PC35LAH	8.0	10.5	5.0	–	3.5	4.7	0.8	2.0	PA66	Black (BK)	
PC5LAH	8.0	12.0	5.9	–	5.0	5.4	0.65	1.5	PA66	Black (BK)	
PC14AH	10.0	20.6	8.8	22.0	14.2	6.15-6.45	2.7	3.3	PA66	Grey (GY)	
PC23	10.0	36.0	6.5	22.0	24.0	6.3	0.6	1.6	PA66	Natural (NA)	
PC5DP7S	–	9.5	8.1	16.0	5.0	7.0	0.8	3.0	PA66	Black (BK)	
PC5DP7L	–	9.5	12.6	16.0	5.0	7.0	0.8	7.0	PA46	Black (BK)	
PC14PT	10.0	20.6	7.6	22.0	14.2	6.15-6.45	2.7	3.3	PA66	Black (BK)	

All dimensions in mm. Subject to technical changes.

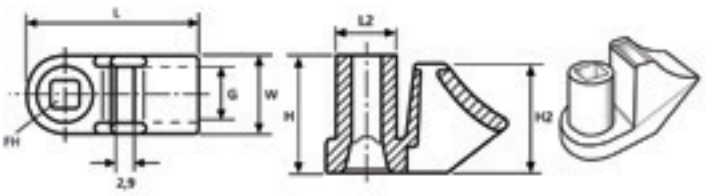
SBH, SBF and CTMS Cable Tie Base for Weld Studs

Features and Benefits

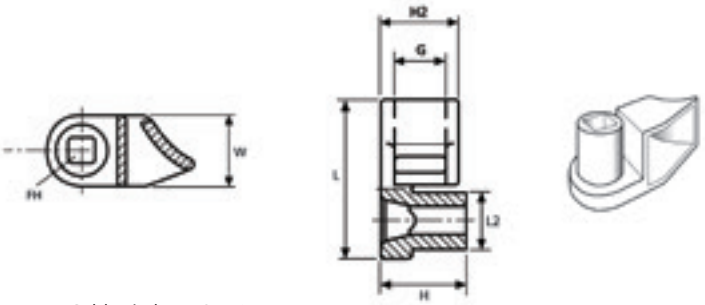
When used with a cable tie and simply hammered onto the stud the SBH type offers a simple and quick method of fixing. The SBH1 and 3 as well as the CTMS5 allow the cables to run across the panel whilst the SBH2 allows the cable to run at 90°C to the panel.

Application

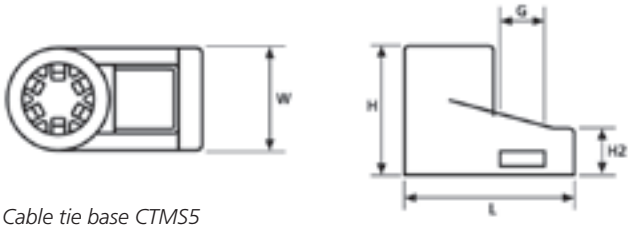
Many industries (but specifically the automotive market) are using 'weld studs' as the standard method of attaching components. Simply hammered onto the stud these parts provide ideal fixing bases for attaching cables, pipes or hoses. The use of weld studs avoids the problems with 'holes' (ingress of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



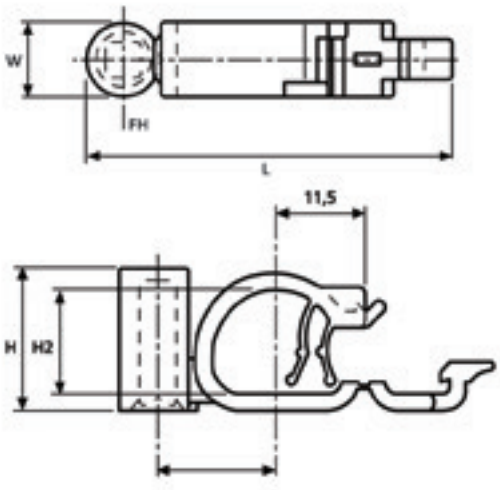
Cable tie base SBH1,3



Cable tie base SBH2



Cable tie base CTMS5



Cable tie base SBF2

Material Data

Material	Polyamide 6.6 (PA66)
Colour	Black (BK)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

RoHS

HF (halogenfree)

Technical Table

Code	Length (L)	Length (2)	Width (W)	Height (H)	Height (H2)	Stud Ø	Bundle Ø max.	Strap Width max. (G)
SBH1	26.8	9.0	12.5	13.9	15.9	5.0	–	8.5
SBH2	26.8	9.0	12.5	14.0	12.5	5.0	–	8.5
SBH3	26.8	9.0	12.5	18.0	15.9	5.0	–	8.5
SBF2	47.7	–	10.0	18.2	13.5	5.0	13.5	–
CTMS5	19.0	–	10.0	14.5	5.3	5.0	–	5.0

All dimensions in mm. Subject to technical changes.

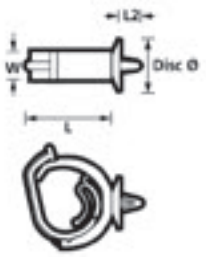
Automatic Harness Clips

Features and Benefits

These clips can be attached to the panel prior to installing the cables, simply pushing the cable into place, closes the clip which activates the automatic locking feature. The parts prefixed with an 'I' can be interlocked giving a greater choice of installation options.

Application

Offering a simple and secure method of attaching cables to panels. Originally designed for the automotive industry they are finding a wide variety of applications in all industries using sheet metal panels.





AHC 1AH - 2AH



AHC2 SS

Technical Table

Code	Length (L)	Length (L2)	Width (W)	Disc Ø	Bundle Ø max.	Fixing Hole Ø (FH)	Panel Thickness min.	Panel Thickness max.	Material Shortcut	Colour
AHC1AH	25.0	7.0	10.0	20.0	13.0	6.2-6.7	0.5	2.0	PA66	Black (BK)
AHC2AH	29.5	7.0	10.0	20.0	20.0	6.2-6.7	0.5	2.0	PA66	Black (BK)
AHC2SS	31.5	–	10.0	–	20.0	–	–	–	PA66	Black (BK)
Connectable										
IAHC3AH	39.0	7.0	10.0	24.0	28.0	6.2-6.7	0.5	2.7	PA66	Black (BK)
IAHC4AH	46.0	7.0	13.0	24.0	36.0	6.2-6.7	0.5	2.5	PA66	Black (BK)
IAHC1T	23.0	–	10.0	–	13.0	–	–	–	PA66	Black (BK)
IAHC2T	30.0	–	10.0	–	20.0	–	–	–	PA66	Black (BK)
IAHC3T	40.0	–	10.0	–	28.0	–	–	–	PA66	Black (BK)
IAHC4T	47.0	–	13.5	–	36.0	–	–	–	PA66	Black (BK)
IAHC5T	57.0	–	13.5	–	45.0	–	–	–	PA66	Black (BK)

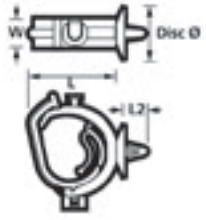
All dimensions in mm. Subject to technical changes.

Material Data

RoHS

Material	Polyamide 6.6 (PA66)
Colour	Black (BK)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)



AH



T



Elements AH and T connected

Pipe and Hose Clips, PC Series

Features and Benefits

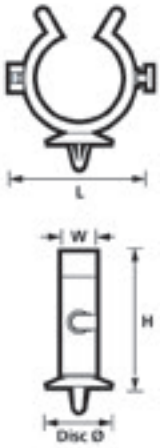
These clips can be attached to the panel prior to installing the pipe or hose, simply push the pipe into the clip for a firm and secure fixing. The parts prefixed with an 'I' can be interlocked giving a greater choice of installation options.

Application

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



Simple and secure installation of pipes or hoses to panels.



IPC AH clip

Material Data

RoHS

Material	Polyamide 6.6 high impact modified (PA66HIR)
Operating Temperature	-40°C to +80°C Continuous, (+105°C for 500 h)
Flammability	UL94 HB



IPC AH clip connected.



IPC P clip connected.

Technical Table

Code	Height (H)	Width (W)	Disc Ø	Bundle Ø max.	Fixing Hole Ø (FH)	Panel Thickness max.	Material Shortcut	Colour
Connectable Arrowhead								
IPC10AH	18.4	10.0	22.0	12.5	6.3	1.6	PA66HIR	Black (BK)
IPC13AH	21.0	10.0	22.0	13.5	6.3	1.6	PA66	Black (BK)
IPC15AH	23.0	10.0	22.0	14.7	6.3	1.6	PA66HIR	Black (BK)
IPC23AH	34.0	10.0	22.0	25.0	6.3	1.6	PA66	Black (BK)
Connectable								
IPC10P	15.0	10.0	–	12.5	–	–	PA66HIR	Black (BK)
IPC13P	17.4	10.0	–	13.5	–	–	PA66	Black (BK)
IPC15P	19.5	10.0	–	14.7	–	–	PA66HIR	Black (BK)
IPC23P	30.5	10.0	–	25.0	–	–	PA66	Black (BK)

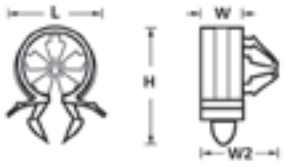
All dimensions in mm. Subject to technical changes.

Material Data

RoHS

Material	Polyamide 6.6 (PA66)
Operating Temperature	-40°C to +85°C Continuous, (+105°C for 500 h)
Flammability	UL94 V2

HF (halogenfree)



OHC clip

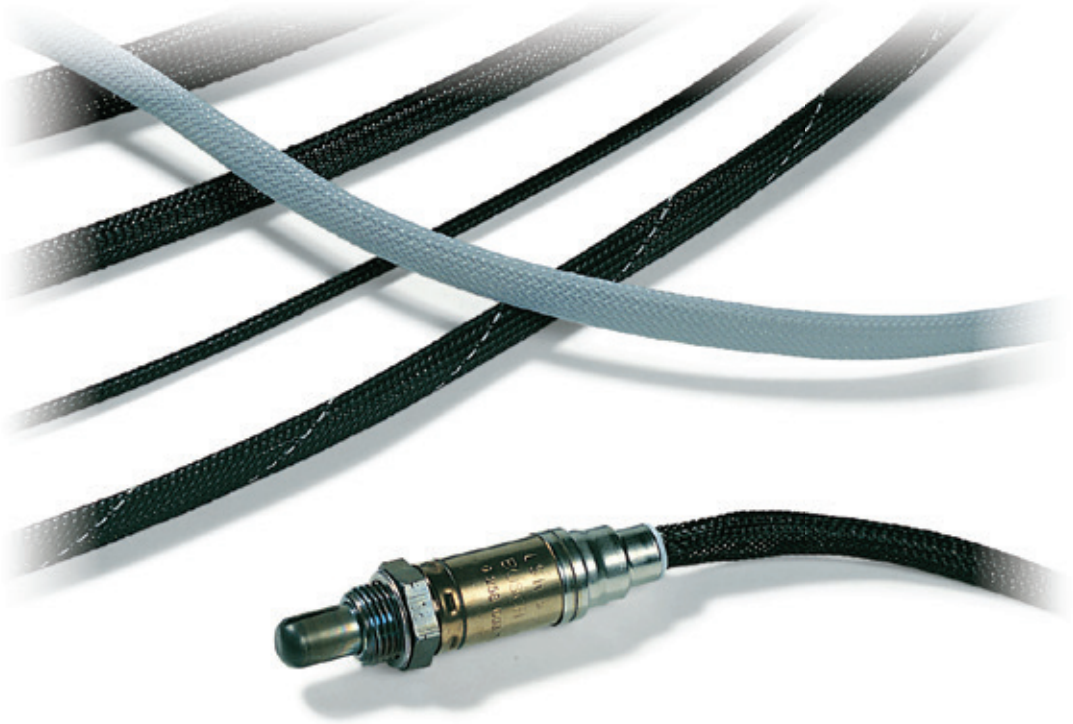
Technical Table

Code	Height (H)	Length (L)	Width (W)	Width (W2)	Bundle Ø min.	Bundle Ø max.	Material Shortcut	Colour
OHC8	20.7	12.5	8	12.5	2	8	PA66	Black (BK)
OHC16	29.5	23.5	8	16	6	16	PA66	Black (BK)

All dimensions in mm. Subject to technical changes.

Cable Protection System

	Page
Helawrap HWPP / HWPA-V0	2/99
Spiral Binding - NFP	2/100
Helagaine HEGPA66 Braided Sleeving	2/101
HELAHOOK Re-sealable Protective Sleeving	2/102
PVC Tubing	2/103
Flexible Metal Conduit	2/104
Convoluted Tubing - Automotive	2/105
Convoluted Tubing - Medium and Light Duty	2/106
External Hinged T Pieces	2/107
External Hinged Y Pieces	2/108
SEM Fast Straight Fitting	2/109
Lock Nuts / Sealing Washers	2/110



Helawrap HWPP / HWPA-V0

Features and Benefits

Helawrap is the ideal solution for bundling and protecting cables and wires in industrial as well as in home or office environments. Thanks to its special profile and handy applicator tool, Helawrap can be applied rapidly and effortlessly.

The unique design allows the user to branch off cable at any point along the cover with ease. Helawrap can also be removed and re-applied as often as required.

Helawrap is available in several colours, a large range of sizes covering most standard applications and in two durable materials.

Application

Helawrap is used to bundle and protect cable and wires in the electrical industry, panel building as well as machine, automotive and truck manufacturing. Helawrap in 25m lengths is the time-saving solution for industrial applications.

Due to its excellent flame-retardant properties, Helawrap Polyamide 6 V0 is the product of choice wherever fire protection is essential, for example in mass transit.

Helawrap in practical 2 metre lengths is designed for domestic and office use. It puts an end to the cable chaos associated with PCs, TVs and Hi-Fi systems.



Choice of colours for various home and office environments.



Insert one or more cables into the insertion slot of the applicator tool.



Place the applicator tool in one end of the Helawrap cable cover.



Simply slide the applicator tool through the Helawrap cover.



Applicator tools HAT are available for every Helawrap cover size.

Technical Table

Code	Colour	Bundle Ø max.	Wall (WT)	Application Tool
HWPP 2m lengths				
H16B	Black (BK)	15.0	0.85	HAT16
H16S	Silver (SR)	15.0	0.85	HAT16
H20B	Black (BK)	20.0	0.95	HAT20
H20S	Silver (SR)	20.0	0.95	HAT20
H25B	Black (BK)	25.0	1.05	HAT25
H25S	Silver (SR)	25.0	1.05	HAT25
HWPP 5m lengths				
H16B5M	Black (BK)	15.0	0.85	HAT16
H16S5M	Silver (SR)	15.0	0.85	HAT16
H20B5M	Black (BK)	20.0	0.95	HAT20
H20S5M	Silver (SR)	20.0	0.95	HAT20
H25B5M	Black (BK)	25.0	1.05	HAT25
H25S5M	Silver (SR)	25.0	1.05	HAT25

All dimensions in mm. Subject to technical changes.

Available in South Africa. 2m lengths complete with applicator

Applicator tools available separately

Spiral Binding - NFP

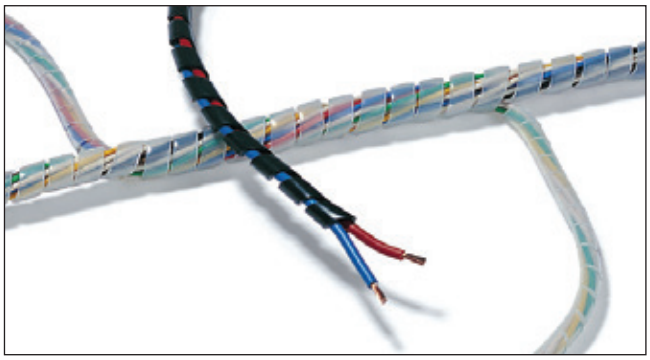
Features and Benefits

Spiral Binding is a general purpose solution for many bundling applications. It is used for organising and protecting cables and hoses. Spiral binding is available in a wide range of diameters, colours and materials. Flame retardant polyethylene (FRP), PA6 (N), PTFE (P) versions provide protection against fire, abrasion, chemical attack and elevated temperature - please refer to material data tables.

Due to the spiral structure, it can be applied to cables or hoses in its original place. Furthermore, cables can branch out at any point and in any direction.

Application

Spiral binding is used to route and bind cables that need high mechanical protection, for instance in the automobile industry as well as in control panels and cabinets. It is also used in electrical installation, where safety is a primary consideration. Spiral binding provides a tidy solution for many applications.



Spiral binding.

Material Data NFP

Material	Polyethylene (PE)
Operating Temperature	-40°C to +90°C Continuous, (+120°C for 200 h)
Flammability	Halogen free

RoHS

HF (halogenfree)

Technical Table

Code	Ø D	Wall (WT)	Range (mm)	Material	Colour	Pack Cont. (m)
NFP-PE						
1NFP	1.6	0.8	3-8	PE	Black (BK)	30
1NFP	1.6	0.8	3-8	PE	Natural (NT)	30
2NFP	4.1	1.0	6-20	PE	Black (BK)	30
2NFP	4.1	1.0	6-20	PE	Natural (NT)	30
3NFP	9.6	1.2	12-100	PE	Black (BK)	30
3NFP	9.6	1.2	12-100	PE	Natural (NT)	30
3NFP15	9.6	1.5	12-100	PE	Natural (NT)	30
4NFP	20.0	1.2	20-150	PE	Black (BK)	30
4NFP	20.0	1.2	20-150	PE	Natural (NT)	30

All dimensions in mm. Subject to technical changes.

Also available in thin wall on request

Helagaine HEGPA66 Braided Sleeving

Features and Benefits

- Expandable sleeve.
- Excellent abrasion resistance.
- Excellent cutting resistance.
- Auto-extinguishing and halogen-free.
- Lightweight.
- Recyclable.
- Insensitive to condensation and fungus.

Application

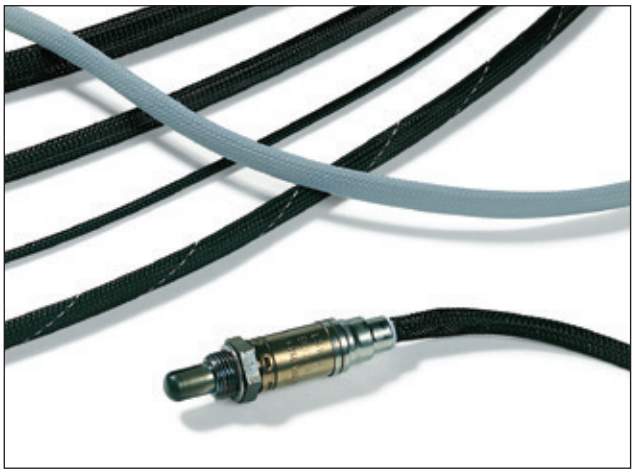
- Protection of cable bundles.
- Automotive.
- Powered environments.

Specifications

- Helagaine HEGPA66 is braided flexible expandable sleeving made of Polyamide 6-6 monofilaments.
- Its dense, tight construction is particularly suited to abrasion protection of electrical cable bundles.
- Helagaine HEGPA66 is a recyclable product, efficient in terms of the resistance and protection of electrical cables in extreme conditions.
- Its expandable feature makes it easy to install while taking up significant differences in cross section, elbows, connections, etc., without bends or flattening.
- Cutting with a hot-knife means there is no fraying of the ends.
- The defined number of Helagaine HEGPA66 references means a wide range of diameters can be covered due to its expandable capacity
- Supplied in coils or cut to length. Helagaine HEGPA66 is an efficient and esthetic solution to protect electrical cables.

Technical Table

Code	Bundle Ø min.	Bundle Ø max.	Colour	Reel Length
MEGA503	2	4	Black (BK)	200m
MEGA504	3	6	Black (BK)	200m
MEGA505	3	7	Black (BK)	200m
MEGA506	4	8	Black (BK)	100m
MEGA508	5	10	Black (BK)	100m
MEGA510	7	12	Black (BK)	100m
MEGA512	8	14	Black (BK)	100m
MEGA514	10	16	Black (BK)	50m
MEGA516	12	18	Black (BK)	50m
MEGA520	15	23	Black (BK)	50m
MEGA525	18	28	Black (BK)	50m
MEGA530	25	32	Black (BK)	50m
MEGA540	30	44	Black (BK)	50m
MEGA550	40	55	Black (BK)	50m
MEGA560	50	65	Black (BK)	50m



Various types of Helagaine braided sleeving.

Material Data

Material	Polyamide 6.6 (PA66)
	CAS:32131-17-2
Operating	-60°C to +160°C,
Temperature	Intermittent +200°C
Melting Point (Metric)	+255°C
Braid Density	ca. 85%
Flammability	UL94 VC
	Renault D45 1333 and FMVSS 302
	(auto-extinguishing)
	NF G 07-128 or ISO 4589 1&2
	(Oxygen index: 31.7%)
	ISO 3795 * NF F 16-101 (Classification 12 F2)
RoHS	Directive 2002/95/CE
Environment	Complies

HF (halogenfree)



The HSG0 hot cutting tool prevents the braided sleeving from fraying.

All dimensions in mm. Subject to technical changes.

Grey available on request

HELAHOOK
Re-Sealable Protective Sleeving

Features and Benefits

HELAHOOK is a lightweight, abrasion resistant and re-sealable protective sleeving. Due to its hook-and-loop sealing system, HELAHOOK can be used to protect cables and hoses that are already fixed. It adapts to very irregular shapes and sizes. It permits quick and easy access to enclosed components and can be used repeatedly. It is therefore a sensible alternative to braided sleeving and corrugated tubing for many common applications.

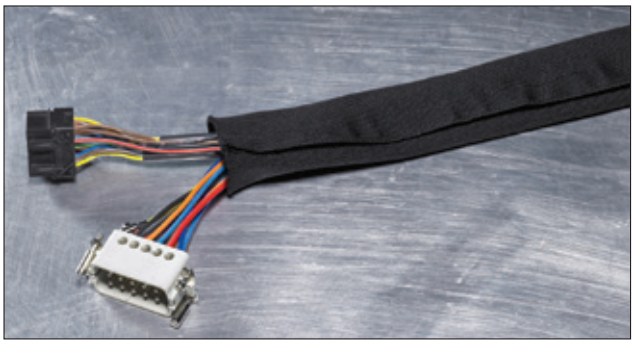
HELAHOOK has good fire-protection properties. It complies with the standard NF F 16-101, Class F1 for smoke emission and gas toxicity and meets UL94 V2.

Application

HELAHOOK is used in industrial machines, electrical appliances, shipbuilding, railway vehicles and in the aerospace industry. HELAHOOK is also employed in automobiles or commercial vehicles. It is the ideal solution for post-termination cable organisation and wherever repeated use is a necessity.



HELAHOOK protective sleeving allows for retrospective fitting and repeated use.



HELAHOOK provides excellent abrasion resistance.

Material Data

RoHS

Material	Polyester (PET)
Colour	-Black (BK)
Operating Temperature	-50°C to +150°C
Flammability	UL94 V2, FMVSS 302

HF (halogenfree)

Technical Table

Code	Bundle Ø min.	Bundle Ø max.	Reel Length (m)
Helahook 10	3	15	25
Helahook 15	10	20	25
Helahook 20	15	30	25
Helahook 25	20	40	25
Helahook 30	25	50	25

All dimensions in mm. Subject to technical changes.
Cuts in any lengths are available on request.

PVC Tubing

Features and Benefits

A thin wall section makes P sleeving ideal for minimising the overall diameter of loom assemblies.

Application

These high-grade PVC sleeves (P) have a thin wall that makes them ideal for insulating wire in areas where space is at a premium. They can be supplied as continuous tubing or cut lengths. The tubing is available in international resistor colour code, pink and transparent.



Helvin P tubing.



Technical Table

Code	Supplied Ø D	Wall (WT) nom.
PVC1	1	1.0
PVC2	2	1.0
PVC3	3	1.0
PVC4	4	1.0
PVC5	5	1.0
PVC6	6	1.0
PVC8	8	1.0
PVC10	10	1.0
PVC12	12	1.0
PVC13	13	1.0
PVC14	14	1.0
PVC16	16	1.0
PVC18	18	1.0
PVC19	19	1.0
PVC20	20	1.0
PVC22	22	1.0
PVC23	23	1.0
PVC24	24	1.0
PVC25	25	1.0
PVC30	30	1.0
PVC35	35	1.0

All dimensions in mm. Subject to technical changes.
Std Pack Sizes: 1-20mm ID = 100m rolls, 22-35mm ID = 50m rolls.
Min Order Qty: As per standard Pack of 500 metre rolls, except black sizes 2, 4, 6, 8 and 10mm.
Standard Colour - Black.
Other colours on request, minimum order quantity will apply.

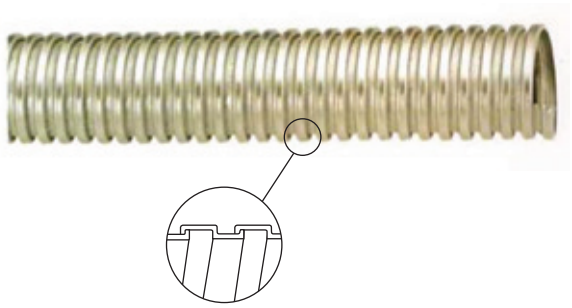
Material Data

Material	PVC (Polyvinylchloride)
Operating Temperature	-65°C to +105°C, Intermittent +135°C
Flammability	UL94 V0 at 1mm thickness, self extinguishing
Specification	UL224, BS 3858 Type 3, IEC 684-3-101 / 104, DEF STAN 59-15

DEF STAN

Please Note for Product Specific Approvals please refer to Appendix.

Flexible Metal Conduit



Construction

- Galvanised steel core, non-liquid tight.
- Square lock style.

Application

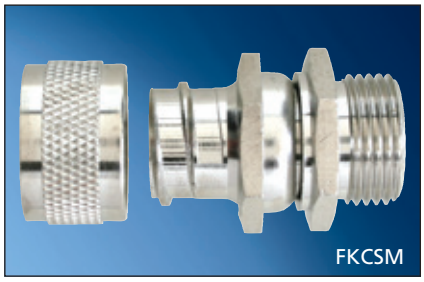
- Used with a variety of set-screws.
- Offers good mechanical protection to wiring in a variety of applications.

Technical Table

Code	Size	Inside Diameter		Outside Diameter (over Jacket)		Min Bend Radius	Length of Reel	Connector
	(mm)	Min (mm)	Max (mm)	Min (mm)	Max (mm)	(mm	(m)	Depending on application
ST16	16	15.8	16.3	19.2	19.7	38	30	SCM"$" - Fixed FKCFM"$" - Fixed FKCSM"$" - Swivel
ST20	20	20.7	21.2	24.5	25.1	45	30	
ST25	25	26.0	26.6	30.4	31.0	55	30	
ST32	35	34.7	35.4	39.6	40.3	62	30	

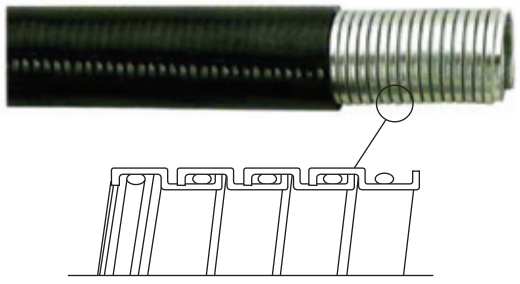
"$" = Size in mm







Liquid Tight Flexible Steel Conduit



Construction

- Galvanised steel core, corrosion resistant.
- Liquid tight PVC jacket, flexible, flame retardant, impact resistant.

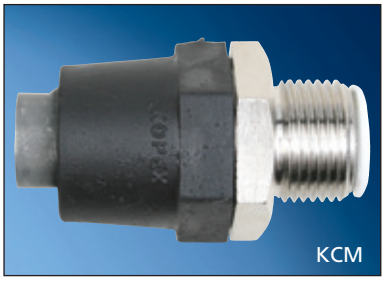
Application

- Used with a variety of set-screws.
- Offers good mechanical protection to wiring in a variety of applications.
- Working temperature -10°C – 70°C.

Technical Table

Code	Size	Inside Diameter		Outside Diameter (over Jacket)		Min Bend Radius	Length of Reel	Connector
	(mm)	Min (mm)	Max (mm)	Min (mm)	Max (mm)	(mm	(m)	Depending on application
KT20$	20	15.80	16.30	20.80	21.30	80	30	KCM"$" – Flex FKCFM"$" - Fixed FKCSM"$" - Swivel
KT25$	25	20.70	21.20	26.20	26.70	100	30	
KT32$	32	26.20	26.80	32.70	33.40	150	30	

"$" = Size in mm Colours : Black, Grey, Orange



Convoluted Tubing

Automotive

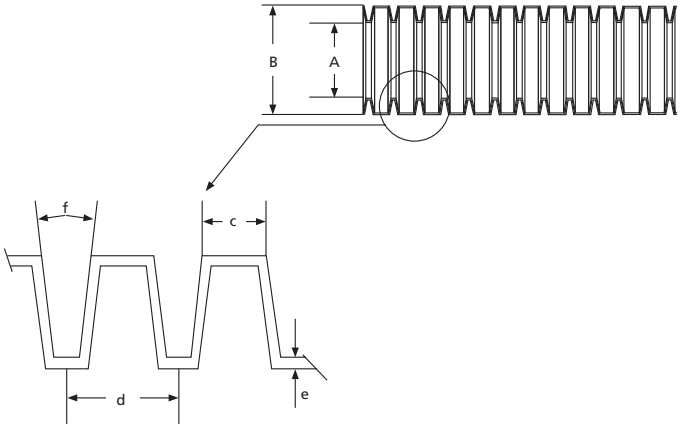
The tubing is manufactured from a grade of Polypropelene that contains no heavy metals (lead) and is halogen-free. This ensures a high quality, very flexible, environmentally acceptable product that meets the stringent requirements of sheathing for automotive wiring harnesses.

The tubing is available in slit or un-slit form. Standard colour - black, but is available on request in mid-grey, white and orange. Operating temperature range is -40°C to 150°C continuously rated.

The Polypropelene tubing has been tested and complies with various motor manufacturers specifications including Mazda, Fiat and Volkswagen. Copies of test certificates are available on request.







CT ** $ $ $ *

- PACK QTY (IF BLANK THEN QTY = 100 m, 1 = 10 m, 2 = 25 m & 5 = 50 m)
- SLIT OR UNSLIT (S = SLIT BLANK = UNSLIT)
- NW / HW = WAVE HEIGHT
- SIZE (OD)
- MATERIAL
- PRODUCT

MATERIAL KEY: Polypropylene (P), Polyamide (A), PVC (V).
Available in Flame Retardant and Heat Resistant.
Standard Colour - Black or Grey. Other colours on request, minimum order quantity will apply.

Technical Table

Code	Nominal Size I.D. x O.D.	Dimensions (mm)					Angle
		Tolerence - A	B	C	D	E	F
$=S for slit	(mm)	±0.4	±0.3	±0.1	±0.15	±0.1	±5°
CTP7NW$	7 x 10	6.9	9.6	1.8	2.6	0.15	11°
CTP10NW$	10 x 13	10.1	12.7	1.8	2.7	0.2	20°
CTP13NW$	13 x 16	12.9	15.8	1.8	2.7	0.2	11°
CTP17NW$	17 x 21	16.8	21.0	2.2	3.2	0.2	11°
CTP22NW$	22 x 26	21.8	25.5	2.2	3.1	0.2	11°
CTP5HW$	5 x 7	5.0	7.1	1.2	2.2	0.15	30°
CTP9HW$	9 x 13	8.5	12.9	2.1	3.14	0.2	18°
CTP11HW$	11 x 16	11.1	15.7	2.1	3.14	0.2	18°
CTP15HW$	15 x 21	15.0	21.2	2.7	3.9	0.2	12°
CTP19HW$	19 x 26	19.1	25.7	2.9	4.3	0.25	12°

Convoluted Tubing

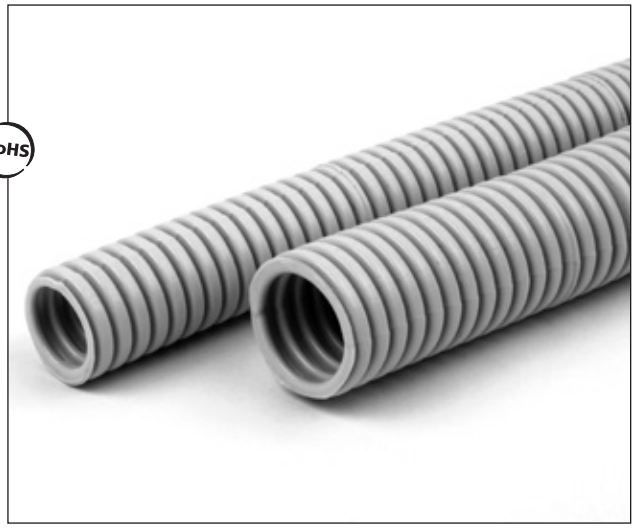
Medium Duty (High Impact)

The tubing is manufactured from high impact, flexible, UV stable PVC material affording a durable, crush resistant product meeting the requirements of the relevant sections of SABS IEC 60614-1:1994 and IEC 60614-2-3:1990 – Pliable conduits for electrical installations.

The tubing is supplied in light grey as standard. The flexibility, impact resistance and UV-stability of the material allows for a wide range of conduiting applications and also meets the construction industry requirements for conduits in concrete slabs, columns, beams and decks. Operating temperature range is -5°C to 60°C.

Compression force 740N.

The PVC tubing carries the Authorisations Committee approval number 0211064.



Technical Table

Code	Nominal Size mm	
	I.D	O.D
V20HT3905	15.5	20
V25HT3905	20.5	25

All dimensions in mm. Subject to technical changes.

Light Duty (Medium Impact)

The tubing is manufactured from medium impact, flexible, UV stable PVC material affording a durable product meeting the requirements of the relevant sections of SABS IEC 60614-1:1994 – pliable conduits for electrical installations.

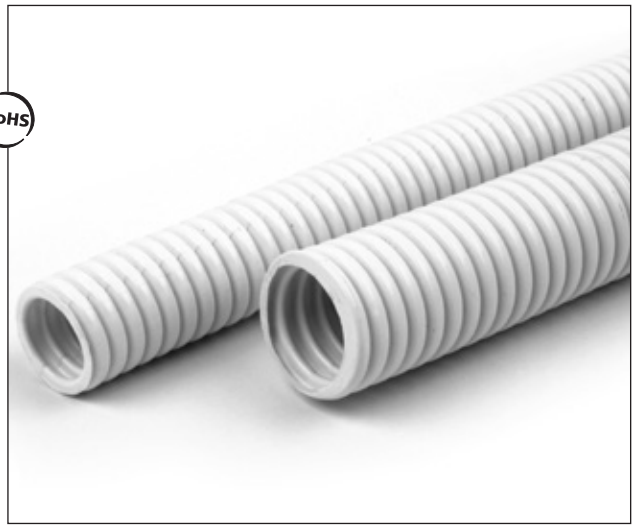
The tubing is supplied in white as standard. The flexibility and UV-stability of the material allows for a wide range of conduiting applications.

Operating temperature range is -5°C to 60°C.

Compression force 320N.

The PVC tubing dimensions are compatible with the standard range of commercially available PVC conduit fittings.

Convoluted tubing is supplied in 50m coils.



Technical Table

Code	Nominal Size mm	
	I.D	O.D
V20HT2605	16	20
V25HT2605	21	25

All dimensions in mm. Subject to technical changes.

External Hinged T Pieces

Suitable for use with all types of HellermannTyton convoluted tubing, these fittings are designed to fit externally and lock together to provide protection to a harness junction.

Available in numerous size combinations, the range can be made more versatile by the use of a reducer to accommodate smaller conduit sizes.



Features

- Integral conduit retention clips ensure quick assembly requiring no special tools and a high pull off force.
- Most 'T' pieces have the ability to be joined together without conduit to produce a manifold.

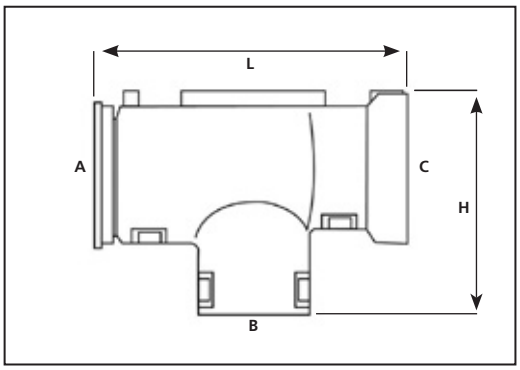
Technical Table

Configuration					
Code	Normal Profile Tubes			Length (L)	Height (H)
	A	B	C	(mm)	(mm)
HT9806083T	7.5	7.5	7.5	26.1	39.2
HT9806138T	10	10	10	28.8	42.4
HT9806158T	13	7.5	13	31.7	40.1
HT9806137T	17	7.5	17	37.0	40.8
HT9806166T	17	13	13	36.9	46.0
HT9806160T	10	10	7.5	28.7	42.4
HT9806167T	17	17	7.5	36.9	50.6
HT9806100T	17	7.5	13	36.9	41.0
HT9806101T	13	10	13	31.6	43.6
HT9806104T	13	13	10	31.6	43.6
HT9806107T	17	10	13	36.9	43.6
HT9806111T	10	7.5	10	28.7	39.4
HT9806136T	17	10	17	37.0	43.8
HT9806137T	17	7.5	17	37.0	40.8
HT9806141T	17	13	17	36.3	50.1
HT9806158T	13	7.5	13	31.7	40.1
HT9806159T	13	13	7.5	31.6	45.3
HT9806160T	10	10	7.5	28.7	42.4
HT9806166T	17	13	13	36.9	46.0
HT9806167T	17	17	7.5	36.9	50.6
HT9806172T	13	10	7.5	36.6	52.3
HT9806180T	7.5	10	7.5	26.1	42.4
HT9806196T	17	17	17	37.2	45.0

All dimensions in mm. Subject to technical changes.
Snap-lock and Clamp-lock manifolds available.

Material Data

Material	Polyamide 66
Colour	Black (BK)
Temp Range	-40°C to +135°C





External Hinged Y Pieces

Suitable for use with all types of HellermannTyton convoluted tubing, these fittings are designed to fit externally and lock together to provide protection to a 'Y' junction on a harness.

Available in numerous size combinations, the range can be made more versatile by the use of a reducer to accommodate smaller conduit sizes.



Features

- Integral conduit retention clips ensure quick assembly requiring no special tools and a high pull off force.

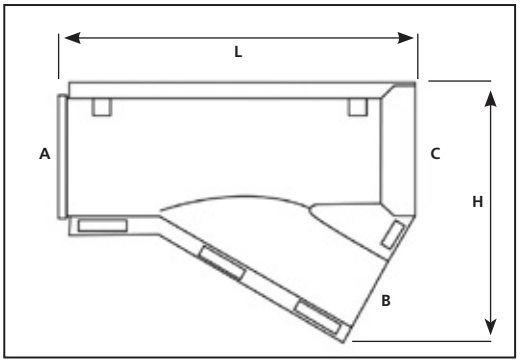
Technical Table

Code	Configuration: Normal Profile Tubes A	B	C	Length (L) (mm)	Height (H) (mm)
HT9817079Y	7.5	7.5	7.5	40.1	46.9
HT9817308Y	13	13	13	46.6	59.9
HT9817306Y	13	10	10	45.4	59.9
HT9817305Y	13	10	13	45.6	59.9
HT9817304Y	13	7.5	10	39.5	47.3
HT9817036Y	17	13	13	46.2	52.9
HT9817035Y	17	10	13	44.0	48.9
HT9817033Y	17	10	10	41.9	46.2
HT9817038Y	17	10	17	49.7	55.6
HT9817201Y	17	13	17	58.4	78.8
HT9817309Y	17	17	10	48.8	59.9
HT9817310Y	17	13	10	46.9	59.9

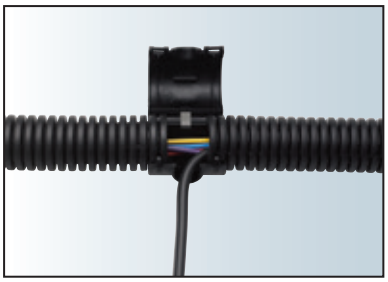
All dimensions in mm. Subject to technical changes.
Snap-lock and Clamp-lock manifolds available.

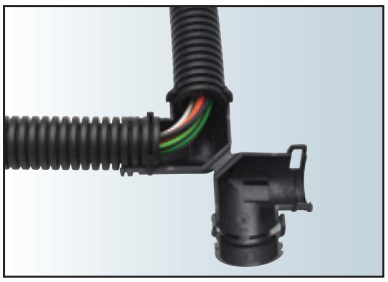
Material Data

Material	Polyamide 66
Colour	Black (BK)
Temp Range	-40°C to +135°C



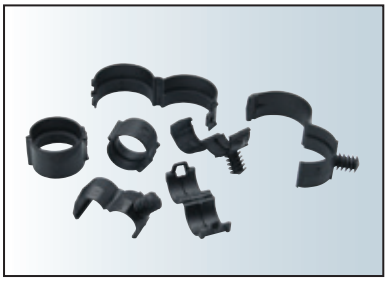
Also available on request









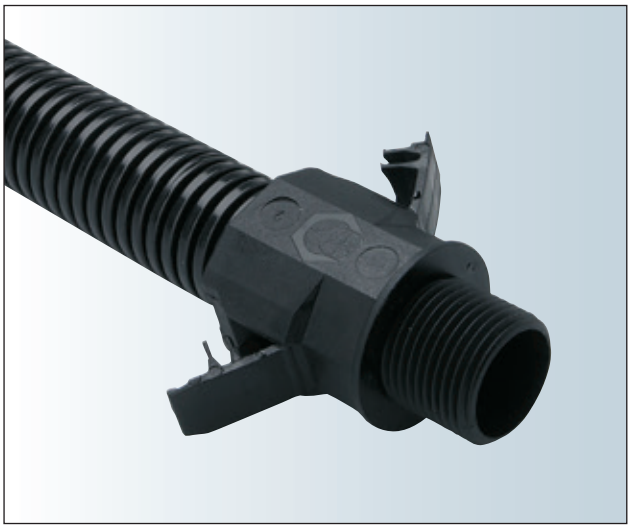




SEM Fast Straight Fitting

The unique design of the SEM Fast range of fittings enables a conduit to be terminated with a threaded adaptor in two easy actions. Simply twist the conduit slightly as it is inserted to the end of the fitting and snap the locking wings into position to secure the fitting to the conduit, providing a weather proof seal to IP65. For applications that require an IP67 seal, the recommended 'O' ring should be used over the last corrugation of the tube before it is located into the fitting. These are available as a separate item from the table below.

These parts can be used with normal profile & UFW profile un-slit conduits. It is important the conduit is cut squarely, preferably on top of a crest, to achieve the correct IP rating.



Features

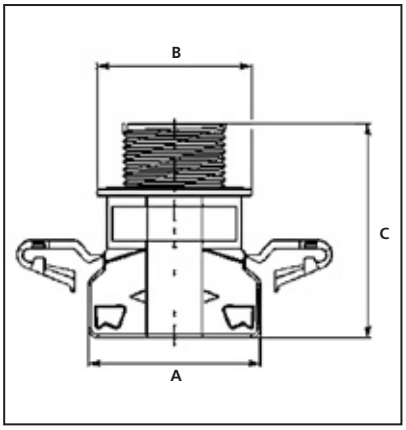
- One part compact design.
- Simple to use.
- High pull off force.
- No special tools required.

Material Data

Material	Polyamide 66
Colour	Black (BK)
Temp Range	-40°C to +120°C

Technical Table

Code	Nominal Conduit Size NW	Dimensions (mm) A	B	C	Thread Length (L) (mm)	Male Thread
HT3803410	10	21.9	20.0	40.0	10.0	M12
HT3803413	10	21.8	19.8	45.0	15.0	M16
HT3803412	13	24.0	20.9	40.0	15.0	M16
HT3803418	17	30.0	29.0	40.0	15.0	M20
HT3803434	22	34.7	33.8	50.0	15.0	M25
HT3803424	23	38.2	35.0	52.0	15.0	M25
HT3803429	29	45.0	44.6	54.0	12.0	M32
HT3803440	29	45.0	44.6	54.0	12.0	M40
HT3803450	37	45.0	44.6	54.0	12.0	M50
HT3803463	50	65.3	72.0	57.5	12.0	M63

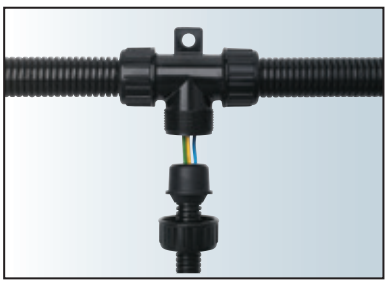


When ordering these items please ensure the appropriate lock nut and sealing face washer on page 112 are included if required.
'O' Ring for IP67 Seal available on request.
SEM Quick Fit 90° Elbows available on request.
All dimensions in mm. Subject to technical changes.

Also available on request









Lock Nuts

A range of PA6 (nylon) locknuts which incorporate a sealing flange and are used to secure a threaded fitting in an enclosure or bulk head application.



Material Data

Material	PA6 (Nylon) 25% glass filled
Colour	Black (BK)
Temp Range	-30°C to +120°C

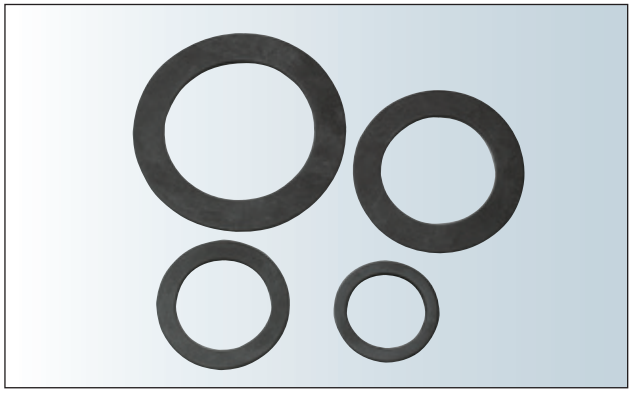
Technical Table

Code	Thread	Dimensions (mm)		
		Across Flat	Overall Diameter	Thickness
HTLNM12	M12 x 1.5	18.0	19.5	5.0
HTLNM16	M16 x 1.5	22.0	24.2	5.0
HTLNM20	M20 x 1.5	26.0	28.6	6.0
HTLNM25	M25 x 1.5	32.0	35.2	6.0
HTLNM32	M32 x 1.5	41.0	46.0	7.0
HTLNM40	M40 x 1.5	50.0	55.0	7.0
HTLNM50	M50 x 1.5	60.0	66.0	8.0
HTLNM63	M63 x 1.5	75.3	83.0	8.0

All dimensions in mm. Subject to technical changes.

Sealing Washers

A range of sealing face washers which can be used with any threaded fitting to provide additional sealing capability. Used on applications where the fitting is terminated in either an enclosure or threaded entry.



Material Data

Material	Neoprene
Colour	Black (BK)
Temp Range	-25°C to +100°C

Technical Table

Code	Suitable For Thread	Dimensions		
		Inside Diameter	Overall Diameter	Thickness (mm)
HTSFWM12	M12	12.0	17.0	2.0
HTSFWM16	M16	16.0	21.2	1.7
HTSFWM20	M20	20.0	27.0	1.7
HTSFWM25	M25	25.0	36.0	1.7
HTSFWM32	M32	32.0	44.7	1.7
HTSFWM40	M40	38.0	48.0	1.5
HTSFWM50	M50	48.0	58.0	1.5
HTSFWM63	M63	61.0	75.0	1.5

All dimensions in mm. Subject to technical changes.

Other Products

	Page
Lacing Twine	2/112
LOH Lacing	2/112
Hellermann Clips	2/112
PVC Electrical Insulation Tape	2/113
Cable Securing - Slotted and Solid Trunking	2/114
Hellermann Cable Glands	2/115
Utility Junction Box	2/119
Accessories and Nylon / PVC Glands	2/120



Lacing Twine

Waxed Nylon Lacing

Hellermann flat braided waxed nylon lacing is available in two sizes. Being impregnated with wax, the lacing grips the cables as they are being laced and does not loosen if the tension is reduced. Conforms to MIL - T -43435, type 1, finish B and is suitable for use up to 150°C.

Technical Table

Code	Standard Reel Length (m)	Width nominal (mm)	Thickness* nominal (mm)	Breaking Load minimum (kg)
MW/062	460	1,5	0,3	13,6
MW/090	460	2,3	0,3	22,7

*Measured under 0,45kg tension.



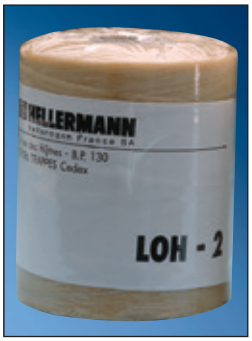
Waxed nylon lacing.

LOH Lacing

A low cost version of the MW waxed nylon lacing is the LOH Series which is available in only one colour (cream).

Technical Table

Code	Length (m)	Diameter (mm)
LOH 1	1000	1,7
LOH 2	1000	2,0



LOH lacing.

PVC Covered Nylon Lacing Cord

PVC covered nylon filled lacing cord, ref PNF, is a high grade tubular nylon core covered with a flexible PVC coating. Suitable for use up to 85°C.

Colour: Black only.

Technical Table

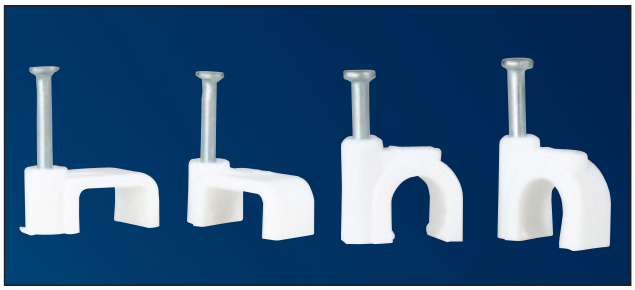
Code	Nominal Diameter (mm)	Colour	Standard Reel Lengths (m)
PNF 1012	1,1	Black	760

Hellermann Clips

A full range of saddles to fit all main contracting domestic cables sizes. From 3,5mm to 12mm round and flat 4mm to 12mm and are available in white, cream, brown and black.

Technical Table

Code	Style	Cable Size	Pin Dimensions Lx Dia. (mm)		Quantity per pack
HT350	Round	3,5	15	1,0	100
HT400	Round	4,0	20	1,5	100
HT500	Round	5,0	20	1,5	100
HT600	Round	6,0	20	1,5	100
HT700	Round	7,0	20	1,5	100
HT800	Round	8,0	29	2,0	100
HT900	Round	9,0	29	2,0	100
HT1000	Round	10,0	29	2,0	100
HT1100	Round	11,0	29	2,0	100
HT1200	Round	12,0	29	2,0	100
HT40	Flat	4,0	15	1,0	100
HT50	Flat	5,0	15	1,5	100
HT90	Flat	9,0	29	2,0	100
HT100	Flat	10,0	29	2,0	100
HT120	Flat	12,0	29	2,0	100



Cable clips.

PVC Electrical Insulation Tape

Self adhesive PVC tapes are made of non-rigid polyvinyl chloride, are accepted as a best quality general use vinyl tape and widely used in wiring works. They provide excellent electrical insulation and adhesion. Another plus is the tapes' high resistance to temperature extremes.



Hellertape

HT2 and HT3 - are both cold and weather resistant electrical tape, coated with an aggressive rubber resin adhesive with good ageing characteristics. Extremely flexible, even in cold weather and unaffected by moisture and most chemicals. No flagging or deterioration even under temperatures as high as 80°C.



Technical Table

Description	PVC Electrical Insulation Tape		
	HT2$	HT3$	HT4BK
Thickness (mm)	0.18	0.13	0.13
Length (m)	20	10	20
Width (mm)	18	19	19
Adhesion (N/cm)	1.8	1.6	1.6
Tensile strength (N/cm)	26	17	17
Elongation (%)	200	160	160
Breakdown Voltage (kv)	8.0	5.5	5.5
Temperature (°C)	-10 to + 80	-10 to + 80	-10 to + 80

$ = Colour
- HT2/HT3 – Black, Red, Green, White, Yellow, Blue
- HT4 – Black

Nitto (No. 21)

A21$208 - Is a cold and weather resistant electrical tape, coated with an aggressive rubber resin adhesive with good ageing characteristics. Extremely flexible, even in cold weather and unaffected by moisture and most chemicals. No flagging or deterioration even under temperatures from -18 to 80°C.



Technical Table

Description	PVC Electrical Insulation Tape
	A21$208
Thickness (mm)	0.2
Length (m)	20
Adhesion (kg/1")	410
Tensile strength (kg/")	9.5
Elongation (%)	200
Breakdown voltage (kv)	9
Insulation Class (°C)	9.0

$ = Colour – Black, Red, Green, White, Yellow, Blue, Green/Yellow

Cable Securing

Slotted Trunking

- Grey RAL700 PVC material.
- Self-extinguishing hard PVC.
- Length 2m.
- Available in a range of sizes.

Technical Table

Code		Size	Std. Pack
20mm	10mm	W x H (mm)	(Lengths)
1525C		15 x 25	50
2525C		25 x 25	75
1530C	1530N	15 x 30	50
3030C	3030N	30 x 30	60
2540C	2540N	25 x 40	50
4040C	4040N	40 x 40	36
6040C	6040N	60 x 40	24
8040C	8040N	80 x 40	30
2560C	2560N	25 x 60	32
4060C	4060N	40 x 60	24
6060C	6060N	60 x 60	16
8060C	8060N	80 x 60	24
10060C	10060N	100 x 60	16
2580C	2580N	25 x 80	42
4080C	4080N	40 x 80	30
6080C	6080N	60 x 80	24
8080C	8080N	80 x 80	18
10080C	10080N	100 x 80	12
12080C	12080N	120 x 80	12
80100C		80 x 100	12
100100C		100 x 100	18

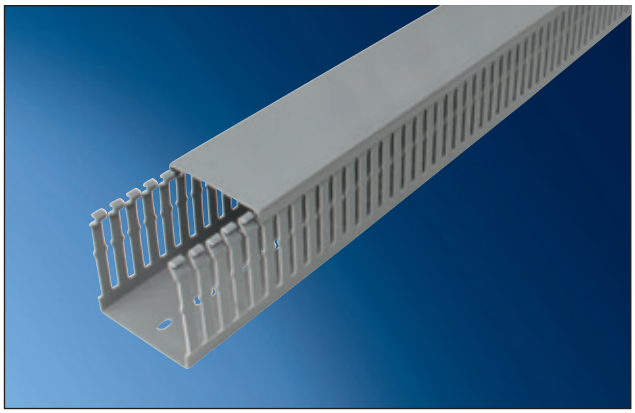
* C Donates Wide Slot 20mm
* N Donates Narrow Slot 10mm

Solid Trunking

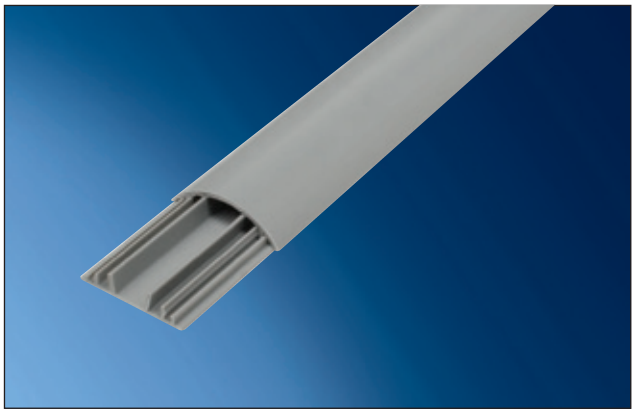
- White PVC material.
- Snap on lids included.
- Available in a range of sizes.
- Available with adhesive backing.
- RCC No. 0608092.

Technical Table

Without Adhesive Tape				
Code	Std Pack Size	Std Pack (Lengths)	Thickness (mm)	Length (m)
1616S	16 x 16	25	0.9	2
2516S	25 x 16	25	1.0	2.9
2525S	25 x 25	15	1.0	2.9
4016S	40 x 16	15	0.9	2.9
4025S	40 x 25	12	1.0	2.9
4040S	40 x 40	9	1.2	2.9
10040S	100 x 40	2	2.0	2.9
4040CNR	40 x 40	4	2.0	3.0
FT48GY	48	10	2.0	2.0
FT70GY	70	10	2.0	2.0



Finger trunking.



Solid floor trunking.



Solid trunking.



Soild corner trunking.

Cable Glands

Cable acceptance range

Technical Table

Gland Size	Entry (mm)	Standard Cable Glands		A2 Compression Glands	
		Max Bedding Diameter (mm)	Max Cable Diameter (mm)	Min Cable Diameter (mm)	Max Cable Diameter (mm)
00	20			3.0	8.0
0	20	12.5	14.8	7.0	12.0
1	20	15.7	18.7	12.0	16.0
2	25	20.6	24.4	16.0	21.0
3	32	26.5	30.0	21.0	27.0
4	40	35.0	39.5	27.0	36.0
5	50	44.0	49.0	36.0	45.0
6	63	56.0	62.2	45.0	57.0
7	75	68.0	74.0	57.0	69.0
8	82	74.0	81.0		

All dimensions in mm. Subject to technical changes. Gland Size 8 is only available in BWLE

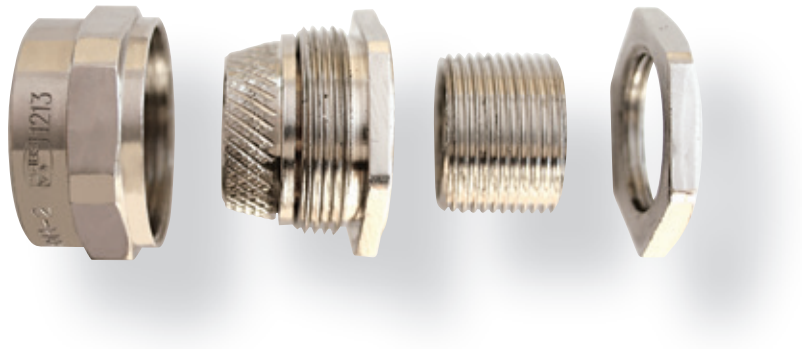
Gland Selection Guide

(For PVC, PVSC SWA Cables SABS 1507 600-1000V)

Technical Table

Gland Size	Recommended Gland Size For Cable Size/Number Of Cores																	
	Number of Cores																	
mm²	2	3	4	5	6	7	8	10	12	14	15	19	20	21	24	27	30	37
1.5	0	0	0	0/1	1	1	1	2	2	2	2	3	3	3	3	3	3	4
2.5	0	0	0/1	1	2	2	2	2	3	3	3	3	3	3	4	4	4	4
4.0	0/1	1	1	1/2	2	2	2	3	3	3	3	4	4	4	4	4	4/5	5
6.0	1	1	1/2	2	2	2												
10.0	1/2	2	2															
16.0	2	2	3															
25.0	2/3	2/3	3															
35.0	2/3	3	3/4															
50.0	3	3/4	4															
70.0	3/4	4	4/5															
95.0	4	4/5	5															
120.0	4	5	5															
150.0	4/5	5	5/6															
185.0	5	5/6	6															
240.0	6	6	6/7															
300.0	6	6	7															
**	8																	

All dimensions in mm. Subject to technical changes.
** Check the bedding diameter of the cable.



Please Note

Owing to the varying dimensions of cables supplied by different cable manufacturers, we cannot guarantee the above chart to be accurate for every make of cable. Two integers appearing in one square '1/2' indicates that the cable size is borderline and either gland size shown may be used.

SABS 1213

BWR Rotary Cone Glands

Nickel-plated brass gland for use with all types of SWA cable. To provide clamping of the armour wire for earth continuity and mechanical retention of the cable. May be used both indoors and outdoors.





Benefits
- Easy to install (rotary cone).
- Protects armour wire.

Sizes
- 0-7.

Features
- Rotary cone.
- High quality nickel plating.

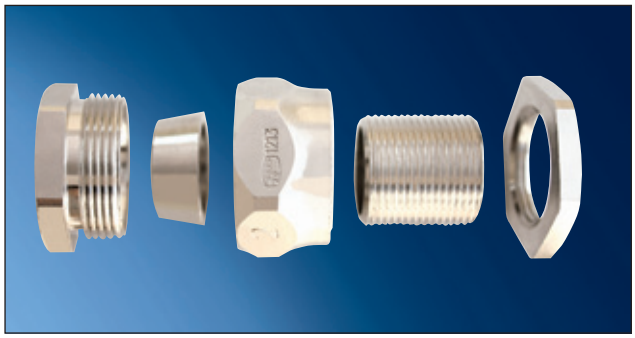
Accessories
- PVC or rubber shrouds.
- Earth tags.

Approvals
- SABS1213 approval.
- Test report available on request.

BWL Loose Cone Glands

Nickel-plated brass gland for use with all types of SWA cable. To provide clamping of the armour wire for earth continuity and mechanical retention of the cable. May be used both indoors and outdoors.





Benefits
- Easy to install (loose cone).
- Protects armour wire.

Sizes
- 0-7.

Features
- Loose cone.
- High quality nickel plating.

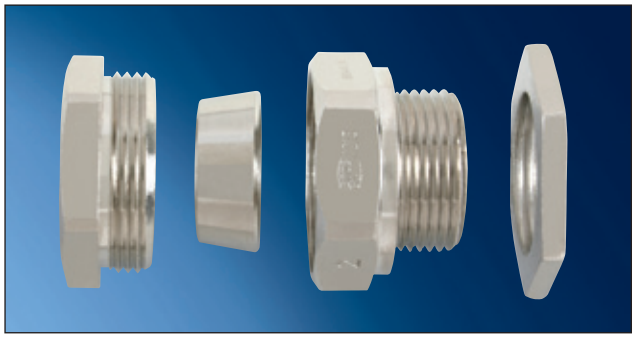
Accessories
- PVC or rubber shrouds.
- Earth tags.

Approvals
- SABS1213 approval.
- Test report available on request.

BWLE Loose Cone Glands (Economy)

Nickel-plated brass gland for use with all types of SWA cable. To provide clamping of the armour wire for earth continuity and mechanical retention of the cable. May be used both indoors and outdoors.





Benefits
- Easy to install (loose cone).
- Protects armour wire.
- Low cost.

Sizes
- 0-8.

Features
- Loose cone.
- High quality nickel plating.

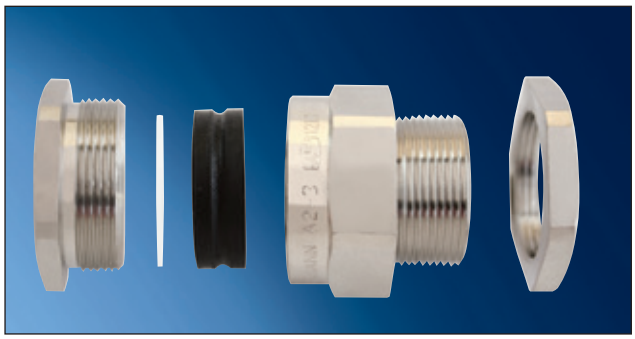
Accessories
- PVC or rubber shrouds.
- Earth tags.

Approvals
- SABS1213 approval.
- Test report available on request.

A2 Compression Glands

Nickel-plated brass gland for use with all types of 'unarmoured' cable. May be used both indoors and outdoors.





Benefits
- Easy to install.
- Displacement seal concept ensures effective seal to the outer sheath.

Sizes
- 0-7.

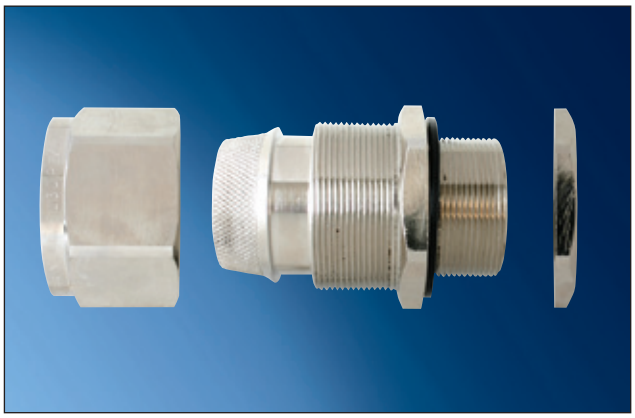
Features
- Novel seal design accommodates wide cable range.
- High quality Nickel plating.

Approvals
- SABS1213 approval.
- Test report available on request.

BWR Exe Rotary Cone Glands

Nickel-plated brass gland for use with all types of SWA cable in hazardous areas. To provide clamping of the armour wire for earth continuity and mechanical retention of the cable. May be used both indoors and outdoors.





Benefits
- Easy to install (rotary cone).
- Protects armour wire.
- IP68 rated.

Sizes
- 0-7.

Features
- Rotary cone.
- High quality nickel plating.

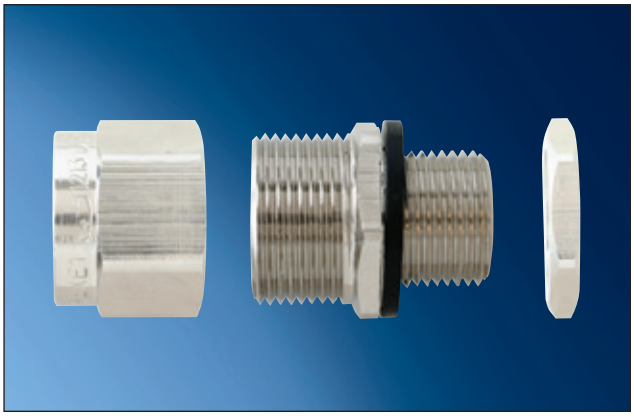
Accessories
- PVC or rubber shrouds.
- Earth tags.

Approvals
- SANS 60079.
  Part 0: 2005.
  Part 7: 2003.
- Test report available on request.

A2 Exe Compression Glands

Nickel-plated brass gland for use with all types of 'unarmoured' cable in hazardous areas. May be used both indoors and outdoors.





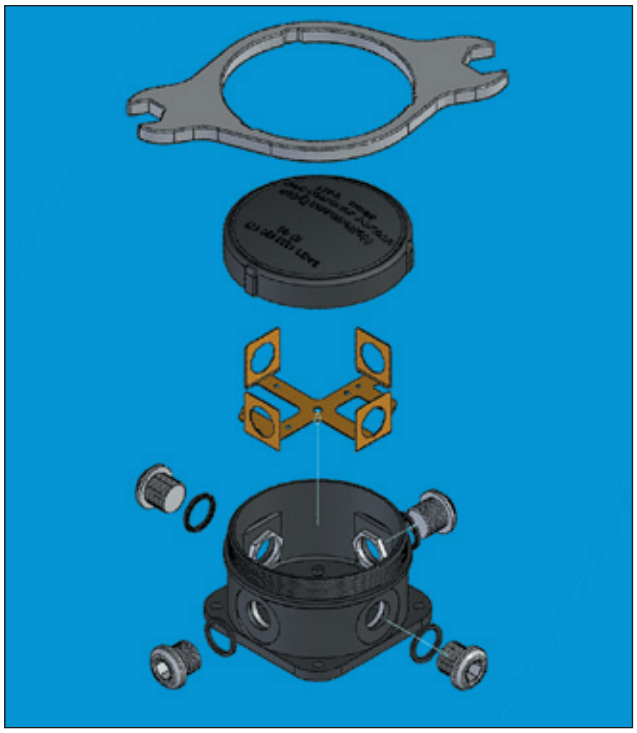
Benefits
- Easy to install.
- Displacement seal concept ensures effective seal to the outer sheath.
- IP68 rated.

Sizes
- 0-7.

Features
- Novel seal design accommodates wide cable range.
- High quality nickel plating.

Approvals
- SANS 60079.
  Part 0: 2005.
  Part 7: 2003.
- Test report available on request.

Utility Junction Box



Features

- Manufactured from high impact, corrosion and UV-resistant material.
- For use in general and industrial installations.
- SABS 1222 IP66 and IP68. (Dust and water tight).
- Allows for 1, 2, 3 and 4 way connections.
- Blanking plugs, O-rings and lock nuts provided.
- No need for drilling and tapping.
- Internal earth plate provided (no exposed metal parts).
- Din rail mounting studs provided.
- UJB1/2T - Special locking key to prevent unauthorised entry (optional).
- UBJ1/2C - UJB1 with clear lid.

Certifications

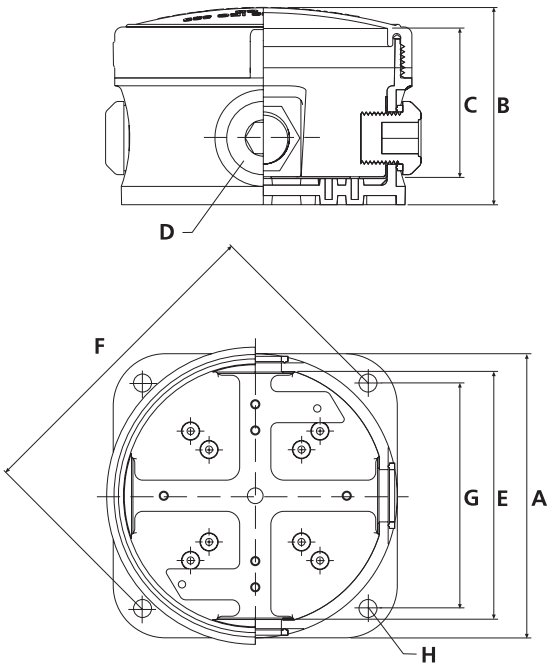
- SABS 1222 IP68.
- IEC529.
- UJB1EX / UJB2EX - IEC 60529, SANS 60529, SANS 60079 - 0/7, SANS 60079 - 15, SANS 61241-1-1, IP66/68, IP68 (2 m cont), Ex e II T6, Ex Na II T6, DIP B21 Tb T6.

Selection Chart



Technical Table

Code	Dimensions (mm)							
	Total Width(A)	Outside Height(B)	Inside Height(C)	Gland Size(D)	Inside Width(E)	Fixing Hole (F)	(G)	(H)
UJB1	109	75	57	M20	94	122	96	6.9
UJB2	135	85.5	59.5	M25	124	150	106	7
UJB1EX	109	75	57	M20	94	122	96	6.9
UJB2EX	135	85.5	59.5	M25	124	150	106	7



Accessories

Shrouds

Technical Table

PVC Shrouds		Rubber Shrouds	
Code	Size	Code	Size
SHPL0	0	SHRL0	0
SHPL1	1	SHRL1	1
SHPL2	2	SHRL2	2
SHPL3	3	SHRL3	3
SHPL4	4	SHRL4	4
SHPL5	5	SHRL5	5
SHPL6	6	SHRL6	6
SHPL7	7	SHRL7	7



Earth Tags

Technical Table

Slip-on Earth Tag			
Code	Slip-size	Ø A (mm)	Ø B (mm)
ET0	0	20	6.8
ET1	1	20	6.8
ET2	2	25	6.8
ET3	3	32	6.8
ET4	4	40	6.8
ET5	5	50	10.5
ET6	6	63	10.5
ET7	7	75	10.5



Metric Nylon Glands



Features

- Multipurpose application.
- Watertight.
- Easy to assemble.
- Good strain relief.
- Wide clamp range.
- Multiple interlock facets guarantee equal compression against cable.
- Advanced thread design improves cap/cable compression.
- Metric thread, 20 x 1.5 mm.

Technical Table

Code	Colour	Material	Clamping Range (mm) diam.	Thread Length (mm)
AGN001GY*	Grey	Glass Filled Nylon	6.5 to 12.5	11.5
BCS1WT	White	ABS	10 to 12.5	13
BS0WT	White	ABS	8.5 to 10.5	13
BS1WT	White	ABS	10 to 12.5	13
BS0BK	Black	ABS	8.5 to 10.5	13
BS1BK	Black	ABS	10 to 12.5	13

Notes: *Glass-filled Nylon Glands have limited UV-resistance



Heat Shrink Tubing

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RoHS — The restriction of the use of certain hazardous substances in electrical and electronic equipment

HF (halogenfree) — Halogen Free

LFH (Limited Fire Hazard) — Limited Fire Hazard

HellermannTyton

■ suitable
□ of limited suitability
++ very good
+ good
o limited
These details are only rough guide values. They should be regarded as a material specification and are no substitute for a suitablity test. Please see our datasheets for further details.

Type	Material	Operating Temperature [°C]	Shrink Ratio	Longitudinal change after complete shrinkage [%]
Heat shrink Tubing Kits				
HTHSKBK	POX	-55 °C to +135 °C	2:1	+/-5% max.
HTHSKCL	POX	-55 °C to +110 °C	2:1	+1%/-15% max.
CP Mini Reels / Packs	POX	-55 °C to +135 °C	2:1	-5% max.
Heat shrink Tubing (General Purpose)				
LVR		-30 °C to +105 °C	2:1	+/-10% max
SGP	POX	-55 °C to +135 °C	2:1	-5% max.
Heat shrink Tubing, Thin Wall				
HFT-A	POX	-55 °C to +135 °C	2:1	-5% max.
HFT-B	POX	-55 °C to +135 °C	2:1	-5% max.
HFT-333	POX	-55 °C to +125 °C	3:1	-15% max.
TCN20	POX	-55 °C to +125 °C	2:1	+/- 5%
TL27	POX	-55 °C to +135 °C	2:1	+5%/-15%
TF21	POX	-55 °C to +135 °C	2:1	+/- 5%
TF24	POX	-55 °C to +135 °C	2:1	+/-5% max.
TF31	POX	-55 °C to +135 °C	3:1	-10% max
Heat shrink Tubing, Thin Dual Wall				
EPS-300	POX	-55 °C to +110 °C	3:1	-10% max.
EPS-400	POX	-55 °C to +110 °C	4:1	-10% max.
TA32	POX	-55 °C to +125 °C	3:1	-15% max.
TA42	POX	-55 °C to +125 °C	4:1	-15% max.
Heat shrink Tubing, Medium Wall				
IMCSA	POX	-55 °C to +110 °C	up to 4:1	-10% max
Heat shrink Tubing, Medium Dual Wall				
TREDUX MA47	POX	-55 °C to +80 °C	up to 4:1	-10% max
MA47	POX	-55 °C to +80 °C	up to 4:1	-10% max.

Technical data						Resistant properties				Possible applications										Applications				
Dielectric strength [kV/mm]	Self-extinguishing	Silicone-free	Copper compatibility (non-corrosive)	Printable		UV light*	Solvents	Fuels	Acids and bases	Harnessmaker	Electronics	Automotive industry	Motor sport	Rail-borne vehicles	Military	Aviation	Ship building	Repair of underground cables	Energy supply	Electrical insulation	Colour marking	Strain relief	Anti-kinking protection	Protection against moisture
20 kV/mm according to ASTM D 2671	Yes	Yes	Yes			+	+	o	+	■	■									■	■		■	
15 kV/mm according to IEC 60684 P2	Yes**	Yes	Yes			+	+	o	+	■	■									■	■		■	■
25 kV/mm according to IEC 60684 P2	Yes	Yes	Yes			+	+	o	+	■										■	■	■		
15 kV/mm according to IEC 243Yes	Yes	Yes	Yes			+	o	o	o	■										■		■	■	
15 kV/mm according to IEC 243Yes	Yes	Yes	Yes			+	o	o	o	■										■		■	■	
20 kV/mm according to IEC 60684 P2	Yes	Yes	Yes	Yes		+	+	+	+	■				■	■	■				■	■	■		
20 kV/mm according to IEC 60684 P2		Yes	Yes	Yes		+	+	+	+	■					■	■				■		■		
19.7 kV/mm	Yes	Yes	Yes	Yes		+	+	o	+	■		■								■		■		
20kV/mm according to ASTM D2671	Yes	Yes	Yes	Yes		+	+	o	+	■		■								■	■	■		
22 kV/mm according to IEC 60684 P2		Yes	Yes			+	+	o	+	■	■	■								■		■		
37 kV/mm	Yes	Yes	Yes			+	+	+	+	■					■	■				■		■		
46 kV/mm		Yes	Yes	Yes		+	+	+	+	■					■	■				■	■	■		
37 kV/mm	Yes	Yes	Yes	Yes		+	+	+	+	■					■	■				■	■	■		
15 kV/mm according to IEC 60684 P2	Yes**					+	+	o	+	■		■			■	■				■		■		■
15 kV/mm according to IEC 60684 P2	Yes**	Yes	Yes			+	+	o	+	■		■								■		■		■
15 kV/mm according to IEC 60684 P2	Yes**	Yes	Yes			+	+	o	+	■		■								■		■		■
15 kV/mm according to IEC 60684 P2	Yes**	Yes	Yes			+	+	o	+	■		■								■		■		■
20 kV/mm	Yes	Yes	Yes			+	o	o	+								■		■	■		■	■	■
20 kV/mm		Yes	Yes			+	o	o	+								■		■	■		■	■	■
20 kV/mm		Yes	Yes			+	o	o	+								■		■	■		■	■	■

* Only valid for Central European climate.
** only outer sleeve

■ suitable
□ of limited suitability
++ very good
+ good
o limited
These details are only rough guide values. They should be regarded as a material specification and are no substitute for a suitablity test. Please see our datasheets for further details.

Type	Material	Operating Temperature [°C]	Shrink Ratio	Longitudinal change after complete shrinkage [%]
Heat shrink Tubing, Heavy Wall				
HU47	POX	-55 °C to +110 °C	up to 3.5:1	-10% max
Heat shrink Tubing, Heavy Dual Wall				
TREDUX HA47	POX	-55 °C to +80 °C	up to 3.5:1	-10% max
HA47	POX	-55 °C to +80 °C	up to 3.5:1	-10% max.
Heat shrink Tubing for Special Purposes				
PST-H	PES	-75 °C to +150 °C	2:1	-10% max.
PST-HT	PES	-75 °C to +150 °C	2:1	-10% max.
Viton-E	FPMX	-55 °C to +200 °C	2:1	-10% max.
Kynar	PVDFX	-55 °C to +175 °C	2:1	-5% max.
TFE2	PTFE	-70 °C to +260 °C	2:1	-20% max.
TR27	POX	-40 °C to +105 °C	2:1	+5%/-10% max.

Type	Material	Operating Temperature [°C]	Shrink Ratio
Shapes			
Series 100-1300-G	POX	-75 °C to 150 °C	up to 3:1
Series 100-1300-GW24	PEEX	-75 °C to 150 °C	up to 3:1
Series 100-1300-HW21	POX	-55 °C to 105 °C	up to 3:1
Blowmoulded -9	POX	-55 °C to 120 °C	up to 3:1
HEK End Caps	POX	-55 °C to 70 °C	up to 3:1
HEV Cable Breakout Boots	POX	-55 °C to 70 °C	up to 3:1
Adhesive			
Helashrink HMT200A	EVA	-55 °C to +105 °C	—
Two-Part Epoxy Adhesive V9500	EP	-75 °C to +150 °C	—

Technical data						Resistant properties				Possible applications											Applications					
Dielectric strength [kV/mm]	Self-extinguishing	Silicone-free	Copper compatibility (non-corrosive)	Printable	UV light*	Solvents	Fuels	Acids and bases	Harnessmaker	Electronics	Automotive industry	Motor sport	Rail-borne vehicles	Military	Aviation	Ship building	Repair of underground cables	Energy supply	Electrical insulation	Colour marking	Strain relief	Anti-kinking protection	Protection against moisture
20 kV/mm		Yes	Yes		+	o	o	+								■		■	■		■	■	■	
20 kV/mm		Yes	Yes		+	o	o	+								■		■	■		■	■	■	■
20 kV/mm		Yes	Yes		+	o	o	+								■		■	■		■	■	■	■
20 kV/mm according to IEC 60684 P2	Yes	Yes	Yes		+	+	++	+	■			■		■	■				■		■			
20 kV/mm according to IEC 60684 P2	Yes	Yes	Yes		+	+	++	+	■			■		■	■				■		■			
15 kV/mm according to IEC 60684 P2	Yes	Yes	Yes		+	++	++	++	■			■		■	■				■		■			
30 kV/mm according to IEC 60684 P2	Yes	Yes	Yes		+	+	++	+						■	■				■		■	■		
40 kV/mm according to DIN 53481	Yes	Yes	Yes		+	++	++	++						■	■				■		■			
15 kV/mm according to IEC 60684 P2	Yes	Yes	Yes		+	+	+	+					■			■			■		■			

Technical data						Resistant properties				Possible applications												Applications					
Dielectric strength [kV/mm]	Self-extinguishing	Silicone-free	Copper compatibility (non-corrosive)	Printable	UV light*	Solvents	Fuels	Acids and bases	Harnessmaker	Electronics	Automotive industry	Motor sport	Railway vehicles	Military	Aerospace	Ship building	Repair of underground cables	Energy supply	Electrical insulation	Colour marking	Strain relief	Anti-kinking protection	Protection against moisture
14 kV/mm	Yes	Yes	Yes	o	++	+	++	++	■	■	■	■	■	■	■	■		■	■	□	■	■	■
14 kV/mm	Yes	Yes	Yes	o	++	+	++	+	■	■	■	■	■	■	■				■	□	■	■	■
15 kV/mm	Yes	Yes	Yes	o	++	+	+	+	■	■	■		■	■		■			■	□	■	■	■
20 kV/mm	Yes	Yes	Yes	++	++	++	++	+	■	■	■	■	■	■	■	■			■		■	■	■
15 kV/mm	Yes	Yes	Yes	++	++	+	+	+					■	■		■	■	■	■				■
15 kV/mm	Yes	Yes	Yes	++	++	+	+	+					■	■		■	■	■	■				■
—						o	o	o	■	■												■	■
—						+	++	+	■	■	■	■	■	■	■							■	■

*Only valid for Central European climate.

Overview of Applications for Heat Shrink Tubing

When selecting the correct heat shrink tubing size, it is important to bear in mind the 80:20 rule. The heat shrink tubing must shrink by at least 20% and not more than 80% of its complete shrinkage capacity to achieve the right result. In our overview of applications you will find the best heat shrink tube for every cable diameter. The 80:20 rule has of course been taken into account in the table.

Heat shrink tubing with a shrinkage ratio of 3:1

With the optimal shrinkage ratio of 3:1, you can cover a wide range of applications with just a few sizes. This leads to reduced stock expenditure and requires less space. 3:1 heat shrink tubes: EPS-300; HFT-333.



Shrink ratio 3:1

Size		Cable / Wire diameter
1.5/ 0.5		0.7mm
		1.3mm
	3/1	1.4mm
		2.6mm
6/2		2.8mm
		5.2mm
	12/4	5.6mm
		10.4mm
24/8		11.2mm
	39/13	18.2mm
		20.8mm
		34.6mm

Heat shrink tubing with a shrink ratio of 2:1

LVR; HCP; CP; HFT-A; HFT-B; SGP; PST-H; PSTHT; VITON-E; Kynar; TFE-2; TR27; SR27



Shrink ratio 2:1

Size		Cable / Wire diameter
1.2/ 0.6		0.7mm
		1.1mm
	2.4/1.2	1.4mm
3.2/1.6		1.9mm
		2.2mm
	4.8/2.4	2.9mm
6.4/3.2		3.8mm
		4.3mm
	9.5/4.7	5.7mm
12.7/6.4		5.8mm
		7.7mm
	19.1/9.5	8.6mm
25.4/12.7		11.4mm
		15.2mm
	38.1/19.1	17.2mm
50.8/25.4		22.9mm
		30.5mm
	76.2/38.1	34.3mm
101.6/50.8		45.7mm
		61.0mm
		68.6mm
		91.4mm

Choosing the right heat shrink tube

The **80:20 rule** means that a heat shrink tube should shrink by a **maximum of 80%** and a **minimum of 20%**.

For example:

A cable with a diameter of 5mm is to be wrapped in heat shrink tubing. In theory both sizes 6/2 and 12/4 would be suitable, since the required diameter of 5mm lies within the shrink range of both tube sizes.

Size 6/2

Maximum shrink (100%)



Maximum shrinkage = 4mm

Optimum shrinkage max. (80%)



Shrinkage of 3.2mm

Optimum shrinkage min. (20%)



Shrinkage of 0.8mm

Size 6/2 has a range of application of between 2.8mm and 5.2mm and is therefore suitable for the cable diameter of 5mm.

Size 12/4

Maximum shrink (100%)



Maximum shrinkage = 8mm

Optimum shrinkage max. (80%)



Shrinkage of 6.4mm

Optimum shrinkage min. (20%)



Shrinkage of 1.6mm

The smallest application diameter of size 12/4 is 5.6mm. This size is therefore unsuitable for a cable diameter of 5mm.

Conversion from imperial to metric

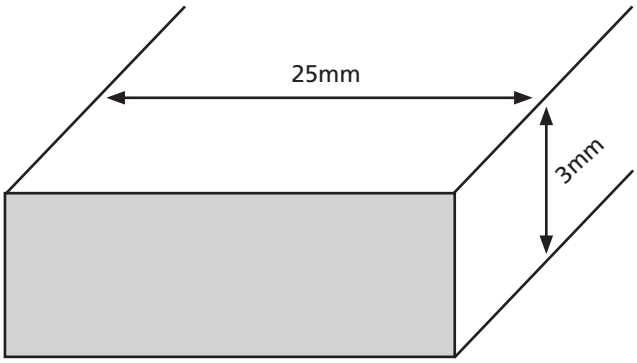
Inch	1/32"	3/64"	1/16"	5/64"	3/32"	1/8"	3/16"	1/4"	3/8"
mm	0.8	1.2	1.6	2.0	2.4	3.2	4.8	6.4	9.5
Inch	1/2"	5/8"	3/4"	1"	1 1/4"	1 1/2"	2"	3"	4"
mm	12.7	15.9	19.1	25.4	31.8	38.1	50.8	76.2	101.6

Busbars

Determine the outside as follows:
Add the four sides and divide by 3.14

NB: The answer will relate to the OD you want to shrink down to. Allowance must be made for the size to give sufficient clearance to slip easily over the bar +10% is a good estimation.

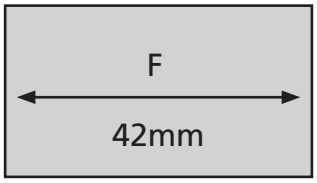
e.g: Busbar size = 25 x 3mm
= 25 + 25 + 3 + 3
= 56
÷ 3.14
= 17.83 (+ 10% for clearance)
= 19.61mm - Most suitable diameter (19.0mm)



Lay Flat Sizes Chart

The lay flat size of heat shrink tube is NOT the Internal Diameter of the tubing.

The lay flat size however is indicative to the approximate ID which will always be smaller than the mm measured (Refer to chart). This chart refers to the standard sizes offered in our range.

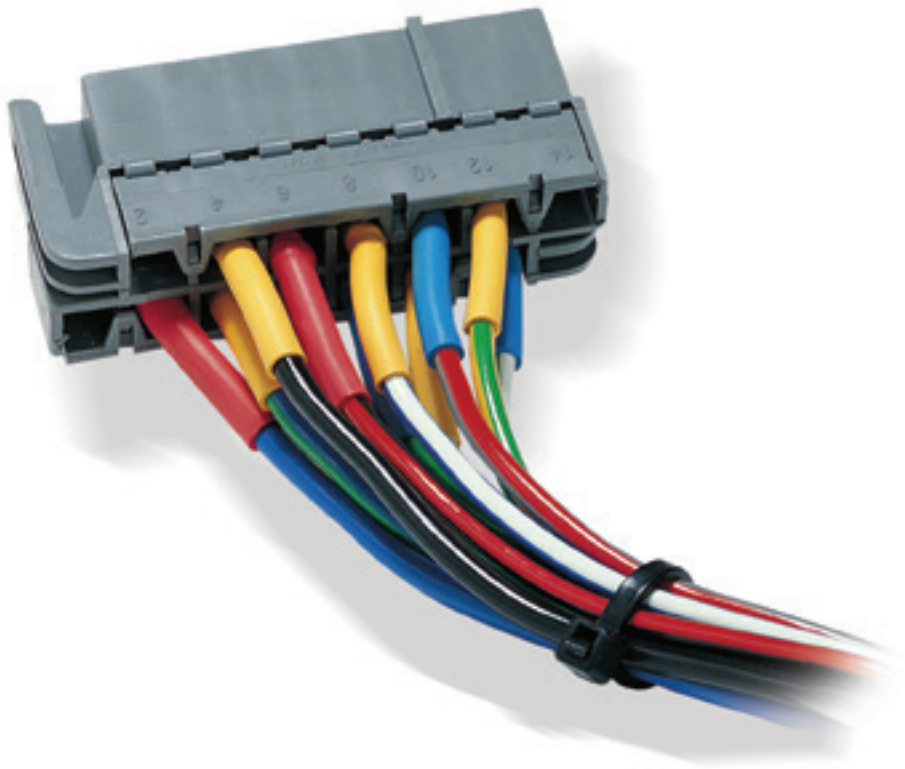


$$D = \frac{2F}{3.14}$$
$$= 2 \times 42\pi$$
$$= 84$$
$$D = 26.8$$

Flat (mm)	Internal Diameter
2.0	1.3
2.5	1.6
4.0	2.4
6.0	3.2
8.0	4.8
11.0	6.4
16.0	9.5
21.5	12.7
32.5	19.0
40.0 - 43.0	25.4
63.0 - 64.5	38.1
84.0 - 85.0	50.8
129.0	76.2
166.5	102.0
222.0	120.0

Heat Shrink

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Heat shrink Joint Kits

Features and Benefits

- Excellent impact and abrasion resistance
- Excellent environmental and UV properties
- Hot melt adhesive ensures excellent protection against moisture
- High electrical insulation properties
- Excellent strain relief and mechanical protection
- Quick and easy installation



Technical Table

Code	Application	Cable Size mm² (3 & 4 Core)
HSJKL154	Standard	1.5 - 4
HSJKL616	Standard	6 - 16
HSJKL2550	Standard	25 - 50
HSJKL70150	Standard	70 - 150
HSJKL185300	Standard	185 - 300
HSJKS156	Submersible	1.5 - 6
HSJKS616	Submersible	6 - 16

Note:
1) **Standard kit** contains inner, outer and 4 ferrule heat shrink sleeves, 2 roll springs, tinned copper braid and instruction leaflet.
2) **Submersible kit** contains inner, outer and 4 ferrule heat shrink sleeves and instruction leaflet.
3) Due to variations in cable sizes, ferrules are not included.

Material Data

RoHS

Shrink Ratio		2:1
Operating Temperature		-55°C to *135/110°C (*insulation/sheaths)
Minimum Shrink Temperature		120°C
Voltage Rating		600/1000V
Material		Polyolefin
Tensile (MPa)	UL 224	>14
Elongation (%)	UL 224	>400
Heat Ageing: Tensile Elongation	UL 224	>10MPa
Water Absorption	ISO 62	<0.15%
Eccentricity	UL 224	<30%
Copper Stability	ASTM D 2671	Pass
ESCR (Environmental Stress Crack Resistance)	ASTM D 1693 (50°C)	No cracking
Dielectric Strength	ASTM D 2671	>20KV/mm
Volume Resistivity	ASTM D 257	10^{14} Ohm.cm

Commericial Grade Polyolefin

Ideal for providing insulation of electrical connections, terminals, components and wiring systems. Requires a minimum shrink temperature of 120°C and is well suited to manual as well as automatic methods of application. Suitable for use as a continuous insulation sleeve in a variety of industrial applications.

Mini Reels

Technical Table

Code	Supplied Ø D	Recov. Ø (D)	Wall (WT) nom.	Qty per Box (m)
CP24R	2.4	1.2	0.5	20
CP32R	3.2	1.6	0.5	18
CP48R	4.8	2.4	0.5	16
CP64R	6.4	3.2	0.6	12
CP95R	9.5	4.8	0.6	10
CP127R	12.7	6.4	0.6	10
CP190R	19.0	9.5	0.8	5
CP254R	25.4	12.7	0.9	4

All dimensions in mm. Subject to technical changes.

Colours available: Black, Red, Blue, White, Yellow, Green/Yellow, Clear

Pre-Packs

Technical Table

Code	Supplied Ø D	Recov. Ø (D)	Wall (WT) nom.	Qty per Box (m)
CP24P	2.4	1.2	0.5	1
CP32P	3.2	1.6	0.5	1
CP48P	4.8	2.4	0.5	1
CP64P	6.4	3.2	0.6	1
CP95P	9.5	4.8	0.6	1
CP127P	12.7	6.4	0.6	1
CP190P	19.0	9.5	0.8	1
CP254P	25.4	12.7	0.9	1
CPPKITBK	2.4 - 4.8 x 10 each / 6.4 - 25.4 x 5 each - (Black)			
CPPKITCOL	2.4 - 12.7 x 5 each / 19.0 - 25.4 x 2 each - (Std Colours)			

All dimensions in mm. Subject to technical changes.

Except for quantity in metre (m).

Standard Colours: Black, Red, Blue, White, Yellow, Green/Yellow, Clear

(Clear is not Self Extinguishing)



CP Mini Reels.

Material Data

RoHS

Type	Commercial Grade Polyolefin
Shrink Ratio	2:1
Longitudinal change after shrinkage	-5% Max.
Minimum Shrink Temperature (Metric)	+120°C
Operating Temperature	-55°C to +135°C
Dielectric Strength (metric)	25kV/mm
Flammability	Flame retardant except for clear



SHSTDP (1 m Pack)

Helashrink Hot Melt Tape HMT200A

Features and Benefits

The hot melt tape flows when heated and provides permanent air and water tight seals.

Application

Designed for use with heat shrink sleeving and mouldings.

Application Method

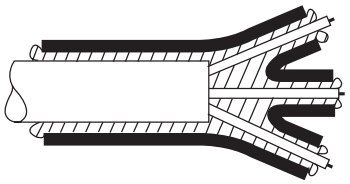
1. Clean and preheat the part to be protected.
2. Wrap the tape around the part and overlap.
3. Put the tubing or heat shrinkable shape over the tape and shrink down.



HMT200A-tape.



Adhesive tape HMT200A for sealing against humidity.



HMT200A

Material Data

Material	Ethylenevinylacetate (EVA)
Colour	Transparent (CL)
Operating Temperature	-50 °C to +105 °C
Melting Point	Starting from +95 °C

RoHS

HF (halogenfree)

Technical Table

Code	Thickness (T)	Width (W)	Reel Length (m)
HMT200A	0.25	25.0	50m

All dimensions in mm. Subject to technical changes.

DEFSTAN

Please note! Not all products listed on this page may have this approval.
For product specific approvals please refer to the Appendix.

LVR Heat Shrinkable Tubing

LVR can be used for cable joints, low voltage busbars and batteries.

Features and Benefits

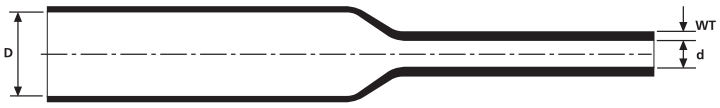
- PVC heat shrinkable tubing
- Self-extinguishing
- Good chemical resistance and mechanical protection



LVR used for mechanical protection.

Material Data

Material	Flexible Polyvinyl Chloride, cadmium free (PVC)
Colour	Standard colours + Green Yellow
Shrink Ratio	2:1
Longitudinal change after shrinkage	+/-10% max
Minimum Shrink Temperature	+135 °C
Operating Temperature	-30 °C to +105 °C
Dielectric Strength	15 kV/mm according to IEC 243
Stocking Temperature	+25 °C max.
Shelf life	12 Months max.
Flammability	ASTM D2671
Specification	UL224 105 °C 600V



LVR

Technical Table

Code	Supplied Ø D	Recov. Ø d	Wall (WT) nom.	Reel Length (m)
LVR12	1.2	0.6	0.40	500
LVR16	1.6	0.8	0.40	500
LVR24	2.4	1.2	0.40	500
LVR32	3.2	1.6	0.40	500
LVR48	4.8	2.4	0.50	500
LVR64	6.4	3.2	0.60	250
LVR95	9.5	4.8	0.60	150
LVR127	12.7	6.4	0.70	100
LVR159	15.9	7.9	0.80	50
LVR190	19.0	9.5	0.80	50
LVR254	25.4	12.7	1.00	50

All dimensions in mm. Subject to technical changes.
Colours available: Black, Red, Blue, White, Yellow, Green/Yellow

Please note! Not all products listed on this page may have this approval.
For product specific approvals please refer to the Appendix.

SGP Flame-retardant Polyolefin General Purpose Heat Shrink Tubing

Features and Benefits

SGP General purpose heat shrink tubing is a cost effective product for numerous commercial insulation applications. It provides effective electrical insulation and protection for in-line components, disconnect terminals and splices. It also bundles wires and cables for very flexible light-duty harnesses, use as strain-relieves for electrical wire connections and colour-codes wires, cables, terminals and components.

SGP Grade is a range of cost-effectively made flame retarded, chemically cross linked polyolefin heat shrink tubing with a 2:1 shrink ratio and a temperature rating of 125°C. SGP tubing is very flexible and does not easily wrinkle when bent. It withstands higher temperature rating, provides better thermal stability and higher resistance to physical abuse than non-crosslinked materials. The product has an operating temperature range from -55°C to +125°C.

The product comes in blue, yellow, black, white, red and transparent. Other colours are also available upon request. All colour tubings are flame retarded except for transparent tubing. The product can be supplied in continuous reels or in pre-cut sleeves.

Technical Table

Code	Supplied O.D.	Recov. O.D.	Shrunk Wall mm (nominal)	Reel Length (m)
SGP16	1.6	0.8	0.430	300
SGP24	2.4	1.2	0.508	250
SGP32	3.2	1.6	0.508	150
SGP48	4.8	2.4	0.508	125
SGP64	6.4	3.2	0.635	65
SGP95	9.5	4.8	0.635	75
SGP127	12.7	6.4	0.635	75
SGP190	19.0	9.5	0.762	75
SGP254	25.4	12.7	0.889	50
SGP381	38.1	19.1	1.020	25
SGP508	50.8	25.4	1.140	25
SGP762	76.2	38.1	1.27	25
SGP1016	101.6	50.8	1.40	25

All dimensions in mm. Subject to technical changes.
Colours available: Black, Red, Blue, White, Yellow, Green/Yellow



Heat shrink tubing SGP.

Material Data

RoHS

Material	Polyofelin, Cross-linked (PO-X)
Shrink Ratio	Approx 2:1
Shrink Temperature Degree Cel	>90°C
Operating temperature test mehod IEC26	-55°C to 125°C
Tensile strength test method ASTM-D-638 N/mm^2	14 N/mm^2
Elongation test method ASTM-D-638%	300%
Low temp flexibility test method ASTM-D-2671 degree Cel	-55°C
Specific gravity test method ASTM-D-792	1.30 Max
Longitudinal change test method ASTM-D-638%	-10% Max
Dielectric strength test method ASTM-D-2671 KV/MM	20 KV/mm
Dielectric constant test method ASTM-D-150	3.0 Max
Flammability test method ASTM-D-2671	2-Flame retarded
Water absorption test method ASTM-D-570	0.15%
Chemical resistance	Good
Copper Corrorsion test method ASTM-D-2671B	Good
Fungus resistance test method MIL-7444	Insert
Volume resistance test method ASTM-D-257 ohm.cm	10^{14} ohm.cm
Specifications	UL-224 - 125°C

Please note! Not all products listed on this page may have this approval.
For product specific approvals please refer to the Appendix.

Insultite HFT-A, HFT-B

Features and Benefits

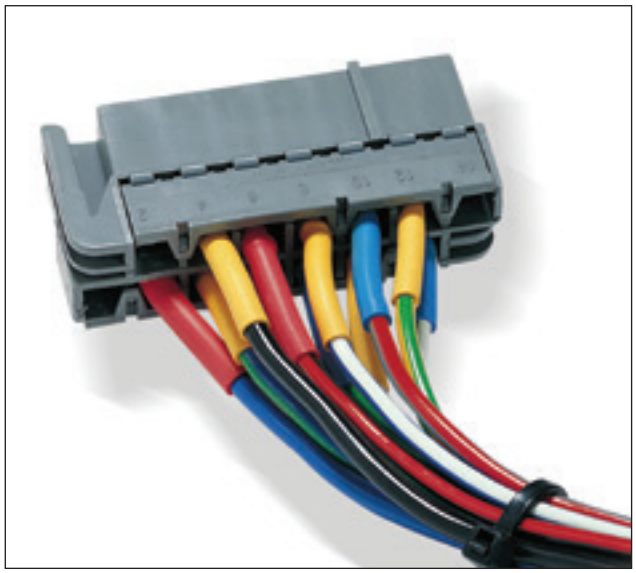
This flexible heat shrink tubing has many excellent properties including fast shrinking, easy handling, good mechanical strength and resistance against chemicals and solvents. It is UL-224 and CSA approved, easy to print on and available in a wide range of colours and internal diameters up to 101.6mm.

Application

This high performance thin wall tubing is used extensively for electrical and mechanical protection. It is also well proven for sleeve marking to identify wiring circuits. It shrinks uniformly to form a permanent insulation covering.

The transparent version is used for bundling and cable protection where visual inspection is required. It is often used as a see through protective sleeve over cable markers.

HFT-A is coloured and self extinguishing.
HFT-B is transparent and halogen free.



HFT-A conforms to major standards used in all Defence industries.



Technical Table

Code	Code	Supplied Ø D	Recov. Ø (D)	Wall (WT) nom.
HFT-A 12	HFT-B 12	1.2	0.6	0.4
HFT-A 16	HFT-B 16	1.6	0.8	0.4
HFT-A 24	HFT-B 24	2.4	1.2	0.5
HFT-A 32	HFT-B 32	3.2	1.6	0.5
HFT-A 48	HFT-B 48	4.8	2.4	0.5
HFT-A 64	HFT-B 64	6.4	3.2	0.6
HFT-A 95	HFT-B 95	9.5	4.8	0.6
HFT-A 127	HFT-B 127	12.7	6.4	0.6
HFT-A 190	HFT-B 190	19.0	9.5	0.8
HFT-A 254	HFT-B 254	25.4	12.7	0.9
HFT-A 380	HFT-B 380	38.0	19.0	1.0
HFT-A 508	HFT-B 508	50.8	25.4	1.1
HFT-A 760	HFT-B 760	76.0	38.0	1.3
HFT-A 1016	HFT-B 1016	101.6	50.8	1.4

All dimensions in mm. Subject to technical changes.

Material Data

RoHS

Material	Polyolefin, Cross-linked (PO-X)
Shrink Ratio	2:1
Longitudinal change after shrinkage	-5% Max.
Minimum Shrink Temperature	+100°C
Operating Temperature	-55°C to +135°C , Intermittent +225°C
Insulation Class	B (VDE 0530)
Dielectric Strength	20 kV/mm according to IEC 684 P2
Flammability	Self extinguishing
Specification	DEF STAN 59-97/3, CUL, Only HFT-A: UL224, MIL-DTL-23053/5C, SAE - AMS - DTL-23053 / 5C, CSA

Please note! Not all products listed on this page may have this approval. For product specific approvals please refer to the Appendix.

HFT-333 High Flexible High Shrink Ratio Polyolefin

HFT-333 is a highly flexible, fast shrinking tubing offering superior properties. With excellent chemical and thermal resistance it is capable of meeting the toughest demands of the aerospace, military and railway industries.

HFT-333 has a 3:1 shrink ratio and can therefore easily cope with components of varying diameter, with no tendency to split.

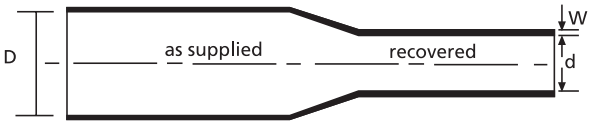


HFT-333.

Technical Table

Code	Bore as supplied minimum (mm)	Bore recovered maximum (mm)	Wall thickness fully recovered (mm)	Standard colour
HFT1505	1.5	0.5	0.45	Black
HFT31	3.0	1.0	0.55	Black
HFT62	6.0	2.0	0.65	Black
HFT93	9.0	3.0	0.75	Black
HFT124	12.0	4.0	0.75	Black
HFT186	18.0	6.0	0.75	Black
HFT248	24.0	8.0	1.00	Black
HFT3913	39.0	13.0	1.15	Black

All dimensions in mm. Subject to technical changes.



Material Data

Material	Polyolefin
Continuous Operating Temp	-55°C to +135°C
Intermittent Temp	+225°C
Minimum Shrink Temp	+100°C
Tensile Strength	18 MPa
Elongation	500%
Flammability	100 MPa (SFM) Self extinguishing
Dielectric Strength	25 KV/mm

RoHS

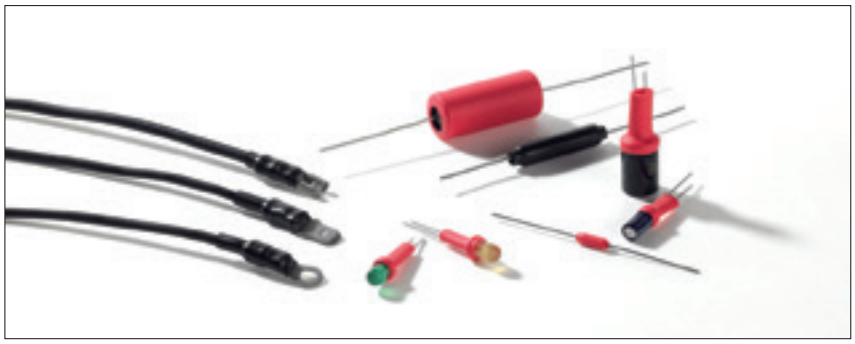
TCN20 Self Extinguishing Heat Shrinkable Tubing

TCN20 is suitable for a wide range of applications such as electrical insulation, mechanical protection and cable bundling.

TCN20 is a general purpose, flame retardant polyolefin tubing with good resistance to common fluids and solvents. This flexible, 2:1 shrink ratio tubing has an excellent physical and electrical performance. The low shrink temperature and good mechanical strength means this tubing is widely used in the electrical, electronics and automotive industries.

Features and Benefits

- Thin walled overexpanded polyolefin tubing
- Inch size tubing with 3:1 shrink ratio
- Very fast shrinking and low shrink temperature
- Highly flame-retardant, UL224 VW-1



Heat shrink tubing TCN20.

Material Data

RoHS

Material	**Polyolefin, cross-linked (PO-X)**
Colour	**Black (BK)**
Shrink Ratio	**2:1**
Longitudinal change after shrinkage	**+/- 5%**
Minimum Shrink Temperature	**+100 °C**
Operating Temperature	**-55 °C to +125 °C**
Dielectric Strength	**20kV/mm according to ASTM D2671**
Flammability	**Self extinguishing**
Specification	**CSA, UL224 125 °C 600V VW-1**



TCN20

Technical Table

Code	Supplied Ø D	Recov. Ø d	Wall (WT) nom.	Reel Length (m)
TCN20 12	1.2	0.6	0.30	300
TCN20 16	1.6	0.8	0.35	300
TCN20 24	2.4	1.2	0.40	300
TCN20 32	3.2	1.6	0.50	300
TCN20 48	4.8	2.4	0.50	300
TCN20 64	6.4	3.2	0.55	300
TCN20 95	9.5	4.7	0.65	150
TCN20 127	12.7	6.4	0.75	100
TCN20 191	19.1	9.5	0.75	60
TCN20 254	25.4	12.7	0.79	60
TCN20 381	38.0	19.0	0.95	30
TCN20 508	50.8	25.4	1.15	30

All dimensions in mm. Subject to technical changes.

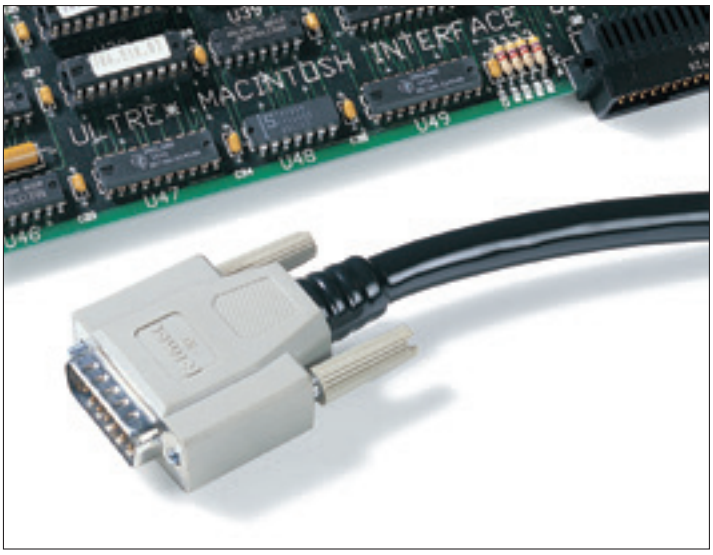
Please note! Not all products listed on this page may have this approval.
For product specific approvals please refer to the Appendix.

TL27 Low Heat Shrinkable Tubing

The product has a low shrink temperature which offers very fast recovery. Application fields include covering of heat sensitive parts, mechanical protection and cosmetic covering.

Features and Benefits

- Very low shrink temperature
- Fast shrinking
- Halogen free



TL27 — a very flexible tubing for automotive or applications where halogens cannot be accepted.



TL27

Material Data

Material	Polyolefin, cross-linked (PO-X)
Colour	Black (BK)
Shrink Ratio	2:1
Operating Temperature	-55 °C to +135 °C
Minimum Shrink Temperature	+90 °C
Flammability	FMVSS 302
Longitudinal change after shrinkage	+5%/-15%

RoHS

HF (halogenfree)

Technical Table

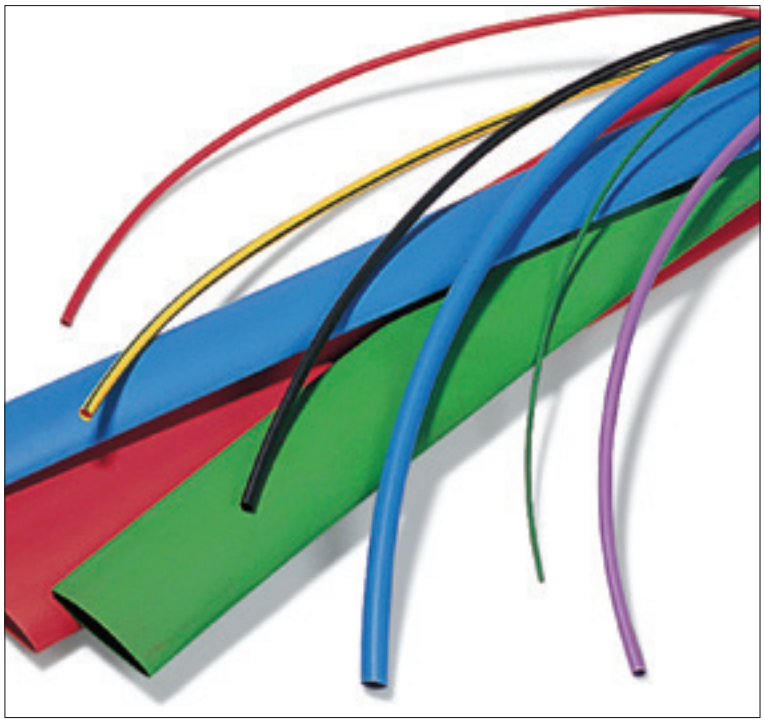
Code	Supplied Ø D	Recov. Ø d	Wall (WT) nom.	Reel Length (m)
TL27 12	1.2	0.6	0.31	500
TL27 16	1.6	0.8	0.33	500
TL27 24	2.4	1.2	0.36	500
TL27 32	3.2	1.6	0.39	300
TL27 48	4.8	2.4	0.42	150
TL27 64	6.4	3.2	0.45	100
TL27 95	9.5	4.8	0.48	100
TL27 127	12.7	6.4	0.52	100
TL27 191	19.1	9.5	0.58	100
TL27 254	25.4	12.7	0.67	100
TL27 381	38.1	19.1	0.76	100
TL27 508	50.8	25.4	0.85	100

All dimensions in mm. Subject to technical changes.

TF21 Thin Wall Heat Shrinkable Tubing

Features and Benefits

- Thin walled, flexible polyolefin tubing
- Fast shrinking and low shrink temperature
- Meets and exceeds many industrial standards
- Big variety of different colours and sizes
- Printable
- Flame retarded and UL224 VW1 listed



TF21 — available in a wide range of colours and sizes.



Material Data

RoHS

Material	Polyolefin, cross-linked (PO-X)
Shrink Ratio	2:1
Operating Temperature	-55 °C to +135 °C
Minimum Shrink Temperature	+90 °C
Flammability	ASTM D876
Longitudinal change after shrinkage	+/- 5%
Dielectric Strength	37 kV/mm
Specification	CSA, JAR/FAR 25.853, NF F 00-608, SAE - AMS - DTL-23053/5 Class 1, UL224 125 °C 600V VW-1

Technical Table

Code	Supplied Ø D	Recov. Ø d	Wall (WT) nom.
TF21 12	1.2	0.6	0.41
TF21 16	1.6	0.8	0.43
TF21 24	2.4	1.2	0.51
TF21 32	3.2	1.6	0.51
TF21 48	4.8	2.4	0.51
TF21 64	6.4	3.2	0.64
TF21 95	9.5	4.8	0.64
TF21 127	12.7	6.4	0.64
TF21 191	19.1	9.5	0.76
TF21 254	25.4	12.7	0.89
TF21 381	38.1	19.1	1.02
TF21 508	50.8	25.4	1.14
TF21 762	76.2	38.1	1.27
TF21 1016	101.6	50.8	1.40

All dimensions in mm. Subject to technical changes.

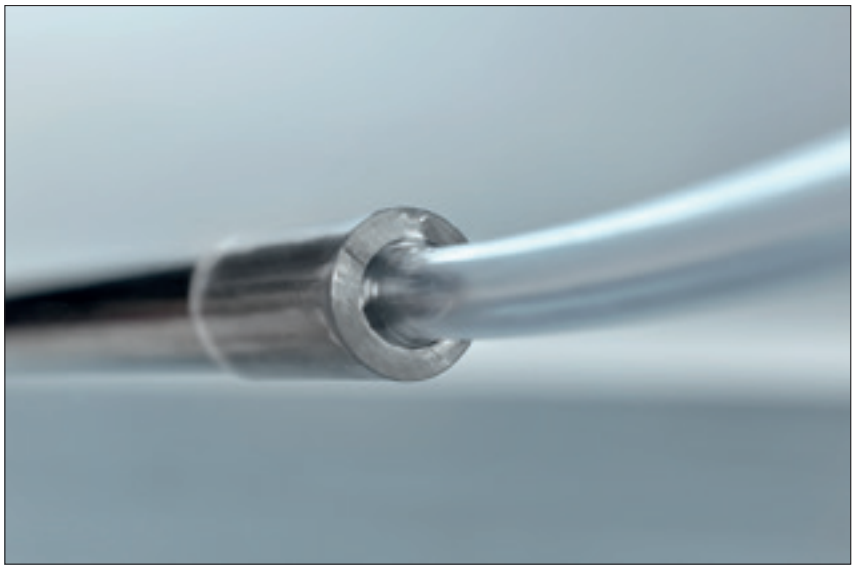
Please note! Not all products listedon this page may have this approval.
For product specific approvals please refer to the Appendix.

TF24 Transparent Heat Shrinkable Tubing

Protects wire and cable markers subject to abuse, while permitting inspectability of each item covered. Protects electronic components while permitting their identification and inspection.

Features and Benefits

- Transparent, flexible polyolefin tubing
- Protects identification marking perfectly
- Halogen free
- Good mechanical and chemical resistance
- VG-approval and additional industrial approvals



TF24 transparent tubing with 2:1 shrink ratio.



Heat shrinkable tubing 2:1

Material Data

Material	Polyolefin, Cross-linked (PO-X)
Colour	Transparent
Shrink Ratio	2:1
Longitudinal change after shrinkage	+/-5% Max.
Minimum Shrink Temperature	+110°C
Operating Temperature	-55°C to +135°C
Dielectric Strength	≥ 30 kV/mm min. according to ASTM D2171
Flammability	Not flame retarded
Specification	DEF STAN 59-97 Type 2B, SAE - AMS - DTL-23053/5 Class 2, VG 95343

RoHS

HF (halogenfree)

Technical Table

Code	Wall (WT) nom.	Supplied Ø D	Recov. Ø d	Colour	Standard Reel (m)
TF2412	0.41	1.2	0.6	Transparent (CL)	100
TF2416	0.43	1.6	0.8	Transparent (CL)	100
TF2424	1.51	2.4	1.2	Transparent (CL)	100
TF2432	0.51	3.2	1.6	Transparent (CL)	100
TF2448	0.51	4.8	2.4	Transparent (CL)	60
TF2464	0.64	6.4	3.2	Transparent (CL)	60
TF2495	0.64	9.5	4.8	Transparent (CL)	50
TF24127	0.64	12.7	6.4	Transparent (CL)	50
TF24190	0.76	19.1	9.5	Transparent (CL)	50
TF24254	0.89	25.4	12.7	Transparent (CL)	50
TF24380	1.02	38.1	19.1	Transparent (CL)	60
TF24508	1.14	50.8	25.4	Transparent (CL)	60
TF24760	1.27	76.2	38.1	Transparent (CL)	30
TF241016	1.40	101.6	50.8	Transparent (CL)	15

All dimensions in mm. Subject to technical changes.

DEFSTAN SAE VG

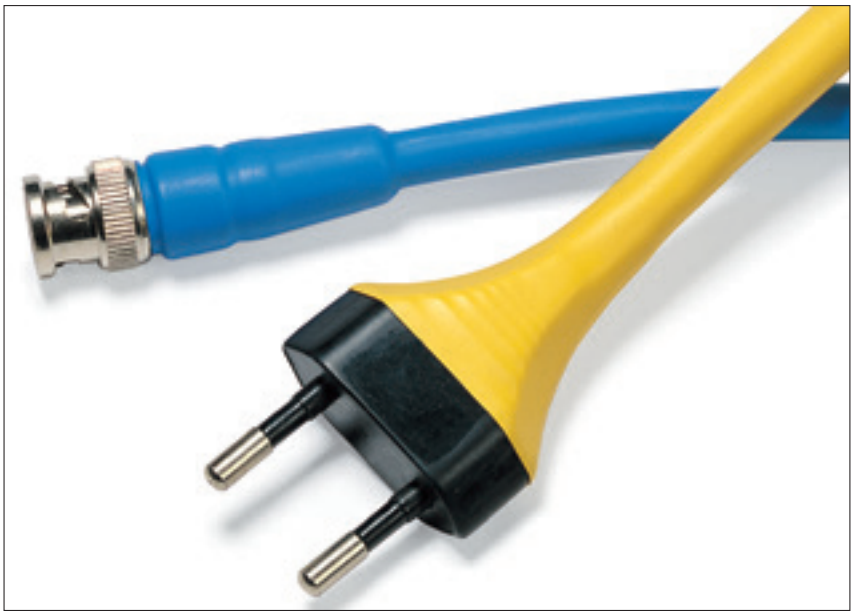
Please note! Not all products listedon this page may have this approval.
For product specific approvals please refer to the Appendix.

TF31 Flexible Heat Shrinkable Tubing

If higher fire protection is a requirement then TF31 heat shrinkable tubing is a good choice. TF31 is used for protection, insulation, identification of wires, cables and light duty harnesses.

Features and Benefits

- Thin walled, very flexible polyolefin tubing
- Few sizes cover a wide range of diameters allowing reduced inventory
- Fast shrinking and low shrink temperature
- Flame-retardant, UL224 VW1 listed



TF31 with 3:1 shrink ratio allowing for a wider range of application.

Technical Table

Code	Supplied Ø D	Recov. Ø d	Wall (WT) nom.
TF3115	1.5	0.5	0.50
TF313	3.0	1.0	0.60
TF316	6.0	2.0	0.70
TF319	9.0	3.0	0.80
TF3112	12.0	4.0	0.85
TF3118	18.0	6.0	1.00
TF3124	24.0	8.0	1.20
TF3140	40.0	13.0	1.25

All dimensions in mm. Subject to technical changes.

Available in Standard colours and Green Yellow

Material Data

RoHS

Material	Polyolefin, cross-linked (PO-X)
Shrink Ratio	3:1
Operating Temperature	-55 °C to +135 °C
Minimum Shrink Temperature	+90 °C
Flammability	ASTM D876
Longitudinal change after shrinkage	+5% / -15%
Dielectric Strength	37 kV/mm
Specification	CSA, UL224 125 °C 600V VW-1

Please note! Not all products listedon this page may have this approval.
For product specific approvals please refer to the Appendix.

TF34 Flexible & Transparent Heat Shrinkable Tubing

Protects wire and cable markers subject to abuse, while permitting inspectability of each item covered. Protects electronic components while permitting their identification and inspection.

Features and Benefits

- Transparent, flexible polyolefin tubing
- Protects identification marking perfectly
- Few sizes cover a wide range of diameters allowing reduced inventory
- Halogen free



TF34 Transparent tubing with 3:1 shrink ratio allowing for a wider range of application.



Heat shrinkable tubing 3:1

Material Data

Material	Polyolefin, Cross-linked (PO-X)
Colour	Transparent
Shrink Ratio	3:1
Longitudinal change after shrinkage	-5% Max.
Minimum Shrink Temperature	+110°C
Operating Temperature	-55°C to +135°C
Dielectric Strength	46 kV/mm
Flammability	Not flame retarded
Specification	DEF STAN 59-97 Type 2B, SAE - AMS - DTL-23053/5 Class 2, VG 95343

RoHS

HF (halogenfree)

Technical Table

Code	Supplied Ø D	Recov. Ø d	Wall (WT) nom.	Reel Length (m)
TF3415	1.5	0.5	0.50	30
TF343	3.0	1.0	0.50	30
TF346	6.0	2.0	0.70	30
TF349	9.0	3.0	0.80	30
TF3412	12.0	4.0	0.85	30
TF3418	18.0	6.0	1.00	30
TF3424	24.0	8.0	1.20	30
TF3440	40.0	13.0	1.25	30

All dimensions in mm. Subject to technical changes.

DEFSTAN SAE VG

Please note! Not all products listedon this page may have this approval.
For product specific approvals please refer to the Appendix.

Insultite EPS-300, EPS-400

- **EPS-300 - 3:1 Shrink ratio**
- **EPS-400 - 4:1 Shrink ratio**

Heat shrinkable tubing EPS seals and protects a wide variety of electrical applications like back end connector sealing, connector-to-cable transitions and splices

Features and Benefits

- Flexible, thin walled polyolefin heat shrink tubing
- With co-extruded hot melt adhesive inner wall
- Protects against moisture
- Provides an environmental sealing of complex parts



EPS-300 and EPS-400 offer high shrink ratios and protection against humidity.



EPS-300 - 3:1, EPS-400 - 4:1

Technical Table

Code	Supplied Ø D	Recov. Ø (D)	Wall (WT) nom.	Thickness of Adhesive (TA) nom.
EPS-300				
EPS-300 3/1	3	1	1.0	0.5
EPS-300 6/2	6	2	1.0	0.5
EPS-300 9/3	9	3	1.4	0.6
EPS-300 12/4	12	4	1.8	0.5
EPS-300 19/6	19	6	2.2	0.8
EPS-300 24/8	24	8	2.5	1.0
EPS-300 40/13	40	13	2.5	1.0
EPS-400				
EPS400-4/1	4.0	1.0	1.00	0.5
EPS400-8/2	8.0	2.0	1.00	0.5
EPS400-12/3	12.0	3.0	1.40	0.6
EPS400-16/4	16.0	4.0	1.80	0.8
EPS400-24/6	24.0	6.0	2.20	0.8
EPS400-32/8	32.0	8.0	2.50	1.0

All dimensions in mm. Subject to technical changes.

Material Data

RoHS

Material	Polyolefin, Cross-linked (POX)
Colour	Black (BK)
Shrink Ratio	3:1, 4:1
Longitudinal change after shrinkage	-10% Max.
Softening Point Adhesive	+90°C
Minimum Shrink Temp	+120°C
Operating Temperature	-55°C to +110°C
Dielectric Strength	15 kV/mm according to IEC 684 P2
Flammability	ASTM D2671 (outer layer only)
Specification	SAE - AMS - DTL-23053 / 4

MIL SAE

Please note! Not all products listedon this page may have this approval.
For product specific approvals please refer to the Appendix.

HA47 & HU47 Thick Wall Heat Shrinkable Tubing up to 3,5:1 - 1 m lengths

- **HA47 - thick wall adhesive lined**
- **HU47 - thick wall unlined**

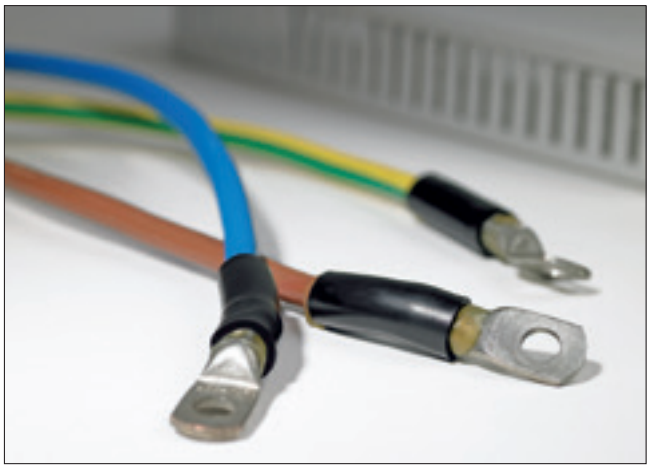
The toughness and wheatherability makes it well suited for exposed applications and underground cable joints and cable terminations.

Features and Benefits

- Thick walled polyolefin adhesive-lined sleeving
- Thermoplastic adhesive protects against moisture and weathering
- Used for low voltage power applications



Heat Shrinkable Tubing 3.5:1 with adhesive.



HA47 — Heavy wall adhesive lined tubing.

Material Data

RoHS

Material	Polyolefin, Cross-linked (PO-X)
Operating Temperature	-55°C to +110°C
Colour	Black (BK)
Shrink Ratio	Uup to 3.5:1
Longitudinal change after shrinkage	-10% max.
Minimum Shrink Temp	+120°C
Softening Point Adhesive	+85°C
Dielectric Strength (metric)	20 kV/mm
Flammability	not flame retarded
Insulation class	A (VDE 0530)

HF (halogenfree)

Technical Table

Code	Supplied Ø D	Recov. Ø d	Wall (WT) nom.	Length (L) (m)
HA47 – thick wall adhesive lined				
HA479	9.0	3.0	1.8	1.0
HA4713	13.0	4.0	2.4	1.0
HA4719	19.0	6.0	2.7	1.0
HA4733	33.0	8.0	3.2	1.0
HA4745	45.0	12.0	4.1	1.0
HA4751	51.0	16.0	4.1	1.0
HA4768	68.0	22.0	4.1	1.0
HA4785	85.0	25.0	4.3	1.0
HA47105	105.0	30.0	4.3	1.0
HA47130	130.0	36.0	4.3	1.0
HA47160	160.0	50.0	4.3	1.0
HA47180	180.0	50.0	4.3	1.0
HU47 – thick wall unlined				
HU479	9.0	3.0	1.8	1.0
HU4713	13.0	4.0	2.4	1.0
HU4719	19.0	6.0	2.7	1.0
HU4733	33.0	8.0	3.2	1.0
HU4745	45.0	12.0	4.1	1.0
HU4751	51.0	16.0	4.1	1.0
HU4768	68.0	22.0	4.1	1.0
HU4785	85.0	25.0	4.3	1.0
HU4790	90.0	30.0	4.3	1.0
HU47130	130.0	36.0	4.30	1.0
HU47160	160.0	50.0	4.3	1.0
HU47180	180.0	50.0	4.3	1.0

All dimensions in mm. Subject to technical changes.

VDE

Please note! Not all products listedon this page may have this approval.
For product specific approvals please refer to the Appendix.

Insultite, IMCS-A Adhesive Lined Heat Shrink Tubing

IMCS-A is an adhesive lined medium wall tubing with outstanding insulation and environmental sealing properties. The product is UV resistant and has excellent mechanical properties.

Features and Benefits

- Shrink ratio minimum 3:1
- Operating temperature -55°C to 110°C
- Excellent impact and abrasion resistance
- Excellent environmental and UV resistance
- High electrical insulation properties
- Colours - black
- Minimum shrink temperature 120°C



Heat shrinkable tubing 3:1.



IMCSA heat shrinking tubing with a high (up to 4:1) shrink ratio.

Material Data

Material	Polyolefin, Cross-linked (PO-X)
Colour	Black (BK)
Shrink Ratio	3:1 up to 4:1
Longitudinal change after shrinkage	-10% Max.
Minimum Shrink Temperature	+120°C
Operating Temperature	-55°C to +110°C (IMCS-A +75°C)
Dielectric Strength	20 kV/mm according to IEC 684 P2
Flammability	ASTM D876 (IMCS-A outer layer only)
Specification	Germanischer Lloyd, Det Norske Veritas (IMCS F471 / IMCS-A F471)*

RoHS

HF (halogenfree)

Technical Table

IMCS-A Adhesive	Supplied Ø D	Recov. Ø (D)	Wall (WT) nom.	Wall (WT)	Thickness of Adhesive (TA) nom.
IMCS-A12	12.0	3.0	2.0	2.7	0.7
IMCS-A19	19.0	6	2.5	3.3	0.8
IMCS-A27	27.0	8.0	2.5	3.3	0.8
IMCS-A32	32.0	7.5	2.5	3.3	0.8
IMCS-A38	38.0	12.0	2.5	3.3	0.8
IMCS-A50	50.0	18.0	2.5	3.3	0.8
IMCS-A70	70.0	26.0	2.5	3.3	0.8
IMCS-A90	90.0	36.0	2.5	3.3	0.8
IMCS-A120	120.0	40.0	2.5	3.3	0.8

All dimensions in mm. Subject to technical changes.

Please note! Not all products listedon this page may have this approval.
For product specific approvals please refer to the Appendix.

Insultite PST-H Elastomeric Tubing

Features and Benefits

PST-H is a flexible, high performance elastomeric tubing. This tubing is used in aerospace, defence, railway and automotive applications. PST-H is resistant to diesel, aviation and hydraulic fluids. It provides reliable protection against abrasion and mechanical damage and is suitable for protecting cables and wire harnesses.

Insultite PST-HT

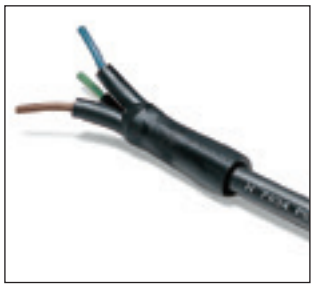
PST-HT is used for long-term protection of cables and wire harnesses in military equipment, motorsport and aviation.

Features and Benefits

The benefit of the thin walled and very flexible PST-HT tubing is in its lighter weight. It is used in areas where weight is a key factor, for example in aerospace applications.



PST-H, PST-HT.



PST-H tubing with a break out boot.



Thin wall PST-HT tubing with a boot.

Material Data

RoHS

Material	Elastomer cross-linked (PES)
Colour	Black (BK)
Shrink Ratio	2:1
Longitudinal change after shrinkage	-10% Max.
Minimum Shrink Temperature (Metric)	+135°C
Operating Temperature	-75°C to +150°C
Dielectric Strength (metric)	20 kV/mm according to IEC 684 P2
Flammability	Self extinguishing
Specification	DEF STAN 59-97/3, VG 95343

Technical Table

Code	Designation as per VG-Norm	Supplied Ø D	Recov. Ø (D)	Wall (WT) nom.	Reel Length (L)
Insultite PST-H					
PST-H 3.2/1.6	VG 95343 T 05 D 001 A	3.2	1.6	0.7	400
PST-H 4.8/2.4	VG 95343 T 05 D 002 A	4.8	2.4	0.8	300
PST-H 6.4/3.2	VG 95343 T 05 D 003 A	6.4	3.2	0.9	300
PST-H 9.5/4.8	VG 95343 T 05 D 004 A	9.5	4.8	1.0	100
PST-H 12.7/6.4	VG 95343 T 05 D 005 A	12.7	6.4	1.2	100
PST-H 19.0/9.5	VG 95343 T 05 D 006 A	19.0	9.5	1.4	50
PST-H 25.4/12.7	VG 95343 T 05 D 007 A	25.4	12.7	1.8	50
PST-H 38.0/19.0	VG 95343 T 05 D 008 A	38.0	19.0	2.4	30
PST-H 51.0/25.4	VG 95343 T 05 D 009 A	51.0	25.4	2.8	20
PST-H 76.0/38.0	VG 95343 T 05 D 010 A	76.0	38.0	3.2	15
PST-H 102.0/51.0	VG 95343 T 05 D 011 A	102.0	51.0	3.5	15
Insultite PST-HT					
PST-HT 3.2/1.6	VG 95343 T 05 D 013 A	3.2	1.6	0.5	400
PST-HT 4.8/2.4	VG 95343 T 05 D 014 A	4.8	2.4	0.5	300
PST-HT 6.4/3.2	VG 95343 T 05 D 015 A	6.4	3.2	0.6	300
PST-HT 9.5/4.8	VG 95343 T 05 D 016 A	9.5	4.8	0.6	150
PST-HT 12.7/6.4	VG 95343 T 05 D 017 A	12.7	6.4	0.6	100
PST-HT 19.0/9.5	VG 95343 T 05 D 018 A	19.0	9.5	0.8	50
PST-HT 25.4/12.7	VG 95343 T 05 D 019 A	25.4	12.7	0.9	50
PST-HT 38.0/19.0	VG 95343 T 05 D 020 A	38.0	19.0	1.0	30
PST-HT 51.0/25.4	VG 95343 T 05 D 022 A	51.0	25.4	1.2	20

All dimensions in mm. Subject to technical changes. **Minimum Order Quantity applicable**

DEFSTAN VG

Please note! Not all products listedon this page may have this approval.
For product specific approvals please refer to the Appendix.

Insultite Viton®-E

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

Features and Benefits

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



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



Heat Shrinkable Tubing 2:1.

Material Data

Material	Fluoropolymer cross-linked (FPMX)
Colour	Black (BK)
Shrink Ratio	2:1
Longitudinal change after shrinkage	-10% Max.
Minimum Shrink Temp	+175°C
Operating Temperature	-55°C to +220°C
Dielectric Strength	15 kV/mm according to IEC 684 P2
Insulation Class	C (VDE 0530)
Flammability	VG 95343
Specification	VG 95343

Technical Table

Code	Designation as per VG-Norm	Supplied Ø D	Recov. Ø (D)	Wall (WT) nom.	Reel Length (L)
VITON®-E 3,2/1,6	VG 95343 T 05 E 001 A	3.2	1.6	0.7	50
VITON®-E 4,8/2,4	VG 95343 T 05 E 002 A	4.8	2.4	0.8	50
VITON®-E 6,4/3,2	VG 95343 T 05 E 003 A	6.4	3.2	0.9	50
VITON®-E 9,5/4,8	VG 95343 T 05 E 004 A	9.5	4.8	1.0	25
VITON®-E 12,7/6,4	VG 95343 T 05 E 005 A	12.7	6.4	1.2	25
VITON®-E 19,0/9,5	VG 95343 T 05 E 006 A	19.0	9.5	1.4	25
VITON®-E 25,4/12,7	VG 95343 T 05 E 007 A	25.4	12.7	1.8	25
VITON®-E 38,0/19,0	VG 95343 T 05 E 008 A	38.0	19.0	2.4	15
VITON®-E 50,8/25,4	VG 95343 T 05 E 009 A	50.8	25.4	2.8	15

All dimensions in mm. Subject to technical changes.

Viton® is a registered trademark of DuPont.

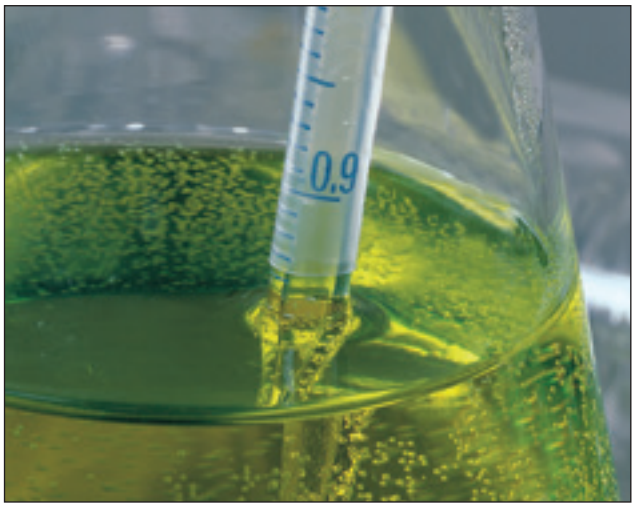
VG Please note! Not all products listedon this page may have this approval.
For product specific approvals please refer to the Appendix.

Insultite KYNAR®

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

Features and Benefits

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



KYNAR® used in a chemical laboratory.



Heat Shrinkable Tubing 2:1.

Material Data

Material	Polyvinylidene Fluoride (PVDF)
Colour	Transparent (CL)
Shrink Ratio	2:1
Longitudinal change after shrinkage	-5% Max.
Minimum Shrink Temperature (Metric)	+175°C
Operating Temperature	-55°C to +175°C
Dielectric Strength (metric)	30 kV/mm according to IEC 684 P2
Flammability	UL224 VW1
Specification	DEF STAN 59-97/3, UL224 150 °C 600V VW-1, MIL-DTL-23053 / 8

Technical Table

Code	Designation as per VG-Norm	Supplied Ø D	Recov. Ø (D)	Wall (WT) nom.
KYNAR® 3/64	VG 95343 T 05 F 001 M	1.2	0.6	0.25
KYNAR® 1/16	VG 95343 T 05 F 001 M	1.6	0.8	0.25
KYNAR® 3/32	VG 95343 T 05 F 003 M	2.4	1.2	0.25
KYNAR® 1/8	VG 95343 T 05 F 004 M	3.2	1.6	0.25
KYNAR® 3/16	VG 95343 T 05 F 005 M	4.8	2.4	0.25
KYNAR® 1/4	VG 95343 T 05 F 006 M	6.4	3.2	0.30
KYNAR® 3/8	VG 95343 T 05 F 007 M	9.5	4.8	0.30
KYNAR® 1/2	VG 95343 T 05 F 008 M	12.7	6.4	0.30
KYNAR® 3/4	VG 95343 T 05 F 009 M	19.0	9.5	0.43
KYNAR® 1	VG 95343 T 05 F 010 M	25.4	12.7	0.48
KYNAR® 1 1/2	–	38.0	19.0	0.51

All dimensions in mm. Subject to technical changes.

KYNAR® is a registered trademark of DuPont.

DEFSTAN VG MIL UL

Please note! Not all products listedon this page may have this approval.
For product specific approvals please refer to the Appendix.

TFE2 & TFE4 Heat Shrinkable Tubing

- **TFE2 - 2:1**
- **TFE4 - 4:1**

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

Features and Benefits

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

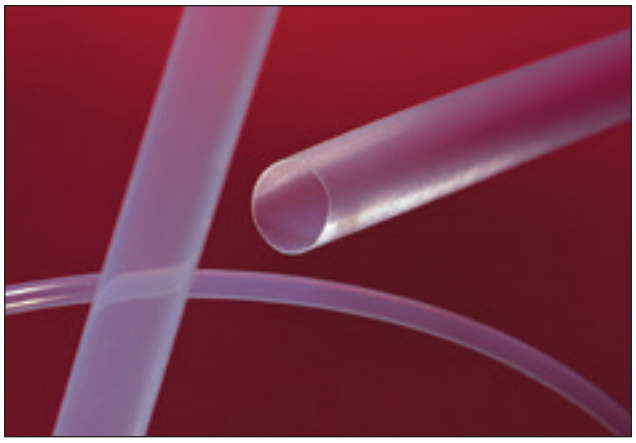


TFE2- 2:1, TFE4 - 4:1

Technical Table

Code	Supplied Ø D	Recov. Ø (D)	Wall (WT) nom.	Length (m)
TFE2-30	0.86	0.38	0.23	1,22
TFE2-28	0.96	0.46	0.23	1,22
TFE2-26	1.17	0.56	0.23	1,22
TFE2-24	1.27	0.69	0.25	1,22
TFE2-22	1.39	0.82	0.25	1,22
TFE2-20	1.52	0.99	0.30	1,22
TFE2-18	1.93	1.25	0.30	1,22
TFE2-16	2.36	1.55	0.30	1,22
TFE2-14	3.05	1.83	0.30	1,22
TFE2-12	3.81	2.26	0.30	1,22
TFE2-10	4.85	2.85	0.30	1,22
TFE2-8	6.10	3.58	0.38	1,22
TFE2-6	7.67	4.52	0.38	1,22
TFE2-4	9.4	5.69	0.38	1,22
TFE2-2	10.92	7.06	0.38	1,22
TFE2-0	11.94	8.81	0.38	1,22
TFE4-5/64	1.98	0.64	0.22	1,22
TFE4-1/8	3.17	0.94	0.25	1,22
TFE4-1/4	6.35	1.60	0.30	1,22
TFE4-3/8	9.52	2.44	0.30	1,22
TFE4-1/2	12.7	3.66	0.38	1,22
TFE4-5/8	15.87	4.52	0.38	1,22
TFE4-3/4	19.05	5.69	0.38	1,22
TFE4-1	25.4	7.06	0.38	1,22
TFE4-1 1/4	31.75	8.82	0.38	1,22

All dimensions in mm. Subject to technical changes.



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

Material Data

RoHS

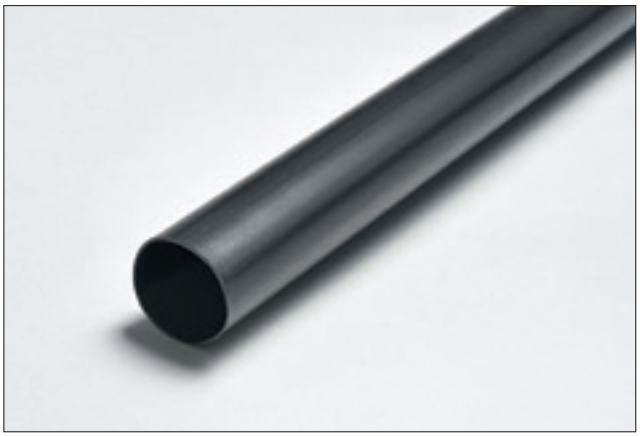
Material	Polytetrafluoroethylene (PTFE)
Colour	Transparent (CL)
Shrink Ratio	2:1, 4:1
Operating Temperature	-70°C to +260°C
Minimum Shrink Temp	+330°C
Flammability	Non burning
Longitudinal change after shrinkage	-20% Max.
Dielectric Strength	40 kV/mm according to DIN 53481
Specification	SAE - AMS - DTL-23053 / 12, MIL-DTL-23053 / 12

MIL SAE

Please note! Not all products listedon this page may have this approval.
For product specific approvals please refer to the Appendix.

TR27 2:1 Flame Retardant Heat Shrinkable Tubing

TR27 is used in applications where toxic emissions involved in a fire must be minimised, e.g. heavily populated buildings or safety sensitive areas like tunnels, hospitals, schools, theatres, mass transit vehicles and computer centres.



TR27 is ideal for safety sensitive areas.

Features and Benefits

- Thin walled, flexible polyolefin tubing
- Optional available with adhesive or as thick walled version (SR27)
- Halogen free and excellent flame-retardant properties
- Meets various industrial standards



Heat Shrinkable Tubing 2:1



Material Data

Material	Polyolefin, cross-linked (PO-X)
Colour	Black (BK)
Shrink Ratio	2:1
Operating Temperature	-40 °C to +105 °C
Minimum Shrink Temperature	+115 °C
Flammability	Limited fire hazard, Halogen free, low generation of toxic gases and corrosive acid, Low smoke generation
Longitudinal change after shrinkage	+5%/-10% Max.
Dielectric Strength	15 kV/mm according to IEC 60684 P2
Specification	CEN TS 45545-2: HL3, DEF STAN 59-97 Type 8, LUL Engineering Standard E1042:A6

HF (halogenfree) LFH (Limited Fire Hazard)

Technical Table

Code	Supplied Ø D	Recov. Ø d	Wall (WT) nom.	Reel Length (m)
TR27 32	3.2	1.6	0.51	150
TR27 48	4.8	2.4	0.51	60
TR27 64	6.4	3.2	0.64	60
TR27 95	9.5	4.8	0.64	60
TR27 127	12.7	6.4	0.64	60
TR27 191	19.1	9.5	0.76	60
TR27 254	25.4	12.7	0.89	60
TR27 381	38.1	19.1	1.02	60
TR27 508	50.8	25.4	1.14	60

All dimensions in mm. Subject to technical changes.

DEFSTAN CEN UNDERGROUND

Please note! Not all products listedon this page may have this approval.
For product specific approvals please refer to the Appendix.

HL1620S Electronic Hot Air Gun

The all-rounder. The two-speed HL 1620S hot air tool soon becomes indispensable. Ideal for drying plasterwork, shrinking on cable sleeves, thawing frozen water pipes, stripping paint, waxing skis and snowboards and much more. With two temperature settings: 300° and 500° C.

Benefits

With optimised centre of gravity for fatigue-free working with one hand. For all standard nozzles (apart from reduction nozzles). With integrated thermal cut-out to prevent overheating. Impressive 1600 watts of power, airflow rate adjustable to two settings (240/450 l/min).

Features

- 1600W
- Temperature rating 300°C - 500°C
- Electronic control
- 2 Speed settings



Steinel HL1620S electronic hot air gun.

Technical Table

Code	HL1620S	
Dimensions (lxwxh)	252 x 85.5 x 200mm	
Output	1600W	
Voltage	230-240V / 50Hz	
Stage	1	2
Airflow rate	240l/min.	450l/min.
Temperature	300°C	500°C
Temperature setting	2 Stages	
Temperature display	–	
Weight	670g	

HL1920E Electronic Hot Air Gun

Expert class. Electronically controlled hot air tool HL 1920 E. A versatile tool for removing and welding sheetings, welding plastics, shrinking on cable sleeves, shaping, soldering, drying, thawing, stripping paint and much more. Continuously adjustable from 80 °C – 600 °C.

Benefits

The tool's optimised weight balance makes it particularly easy to use with just one hand. For all STEINEL nozzles. With integrated thermal cut-out to prevent overheating. Airflow rate adjustable in three stages (150 / 150-300 / 300-500 l/min.). With hanger. Fine dust filter and HL Scan for measuring temperature at the workpiece are available as accessories.

Features

- 2000W
- Temperature rating infinitely adjustable 80°C - 600°C
- Electronic control
- 3 Fan settings



Steinel HL1920E electronic hot air gun.

Technical Table

Code	HL1920E		
Dimensions (lxwxh)	253 x 84.5 x 200mm		
Output	2000W		
Voltage	230-240V / 50-60Hz		
Stage	1	2	3
Airflow rate	150l/min.	300l/min.	500l/min.
Temperature	80°C	80 - 600°C	
Temperature setting	infinitely variable in 9 increments by thumbwheel		
Temperature display	–		
Weight	840g		

HL2020E Electronic Hot Air Gun

Electronically controlled hot air tool 2020E with LCD. Professional technology for shaping tiles, desoldering circuit boards, welding plastics, drying repair filler, shrinking cable sleeves, soldering pipes and a whole lot more. Adjustable by joystick from 80 °C – 630 °C in 10 °C steps. Residual heat indicator to prevent burns. Supplied in plastic case, includes 9mm reduction nozzle.

Benefits

LCD display, residual heat indicator for optimum protection, ergonomic operation by joystick, impressive 2200 watts of power, adjustable from 80 °C to 630 °C in 10 °C steps. Airflow rate adjustable in three stages (150 / 150-300 / 300-500 l/min.). With plastic case and 9mm reduction nozzle. Optionally available fine-dust filter and HL Scan for measuring temperature at the workpiece. The mains power cord is very easy to replace by removing the cap on the handle.

Features

- 2200W
- Temperature rating 80°C - 630°C
- Electronic control
- 3 Speed settings



Steinel HL2020E electronic hot air gun.

Technical Table

Code	HL2020E		
Dimensions (lxwxh)	253 x 85.5 x 200mm		
Output	2200W		
Voltage	230-240V / 50Hz		
Stage	1	2	3
Airflow rate	150l/min.	300l/min.	500l/min.
Temperature	80°C	80 - 630°C	
Temperature setting	infinitely variable in 10 °C steps at rocker switch		
Indicated on the tool	LCD in 10° C steps		
Weight	900g		

HG2220E Hot Air Gun

Handy and practical. Lightweight. Tireless. Electronically controlled HG2220E hot air tool. 2200 W, infinitely variable temperature setting from 80 – 630 °C in 9 steps by thumbwheel. Airflow regulation in 2 stages from 150l/min to 500l/min. Integrated fine dust filter.

Benefits

The 2200W HG2220E hot air tool with ceramic heater comes with infinitely variable temperature adjustment (80 - 630 °C). The appropriate airflow rate can be selected from 2 stages, 150 l/min and 500 l/min. A weight of just 610g is barely worth talking about and makes it very easy to concentrate on the work being done.

Features

- 2200W
- Infinitely variable temperature adjustment from 80 – 630 °C
- 9 Steps by thumbwheel



Steinel HG2220E hot air gun

Technical Table

Code	HG2220E	
Dimensions (lxwxh)	337 x 75 x 89mm	
Output	2200W	
Voltage	230-240V / 50-60Hz	
Stage	1	2
Airflow rate	150l/min.	500l/min.
Temperature	80°C	80 - 630°C
Temperature setting	infinitely variable in 9 increments by thumbwheel	
Temperature display	–	
Weight	610g	

How to apply Heat shrink

1. Select the proper size of heat shrink tubing for your project.

2. Cut the heat shrink tubing to a usable length (when cutting make sure you have clean and straight ends to avoid the tubing from splitting at the ends), and be sure to allow for a minimum 5-6mm overlap over any existing insulation or connectors. Keep in mind that tubing also shrinks lengthwise, typically 5-7% during the shrinking process.

3. Slide the cut tubing over the object that you're covering, if you'll be splicing, slide the tubing over the centre of the splice, and allow for equal overlap on both sides.

4. Before shrinking, check your tubing's specifications for the recommended heating temperature. Use a recommended heat gun to shrink the tubing. Since uncontrolled heat can cause uneven shrinkage, physical damage and insulation failure, the use of open flame is not recommended.

5. If you're covering a long length of cable with tubing, begin shrinking at one end, and gradually work your way down to the other. To ensure that the tubing shrinks evenly and without air bubbles, rotate the object as you're applying heat.

6. Evenly apply heat over the length and around the diameter of the tubing, until it is uniformly shrunken and conforms to the shape of the cable, hose, or splice that it's covering. Immediately remove the heat source, and allow the tubing to cool slowly before you apply physical stress to it.

7. Avoid overheating the heat shrink tubing, because it will become brittle and/or charred.

1



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3



4



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6



7



Heat Shrinkable Moulded Shapes



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Material Overview

HellermannTyton offers a wide range of moulded parts. The extensive product line includes low profile, bulbous and lipped types for use on circular and D-type connectors as well as complex multiway transitions.

They can be sealed with our special adhesives and encapsulants to ensure the proper degree of mechanical support, strain relief and environmental protection.

A range of specially formulated materials is available to meet a variety of performance requirements.



Material Specifications

	G*	B7	H	B8	-9
Material	Polyester elastomer cross-linked (PEEX)	Polyolefin, Chemically cross linked (POX)	Polyolefin, cross linked (POX)	Polyolefin, Chemically cross linked (POX)	Modified elastomer blend
Colour	Black (BK)	Black (BK)	Black (BK)	Black (BK)	Black (BK)
Minimum Shrink Temperature (Metric)	+135°C	+135°C	+135°C	+135°C	+135°C
Operating Temperature	-75°C to +150°C	-55°C to +135°C , Intermittent +225°C	-55°C to +105°C	-55°C to +70 °C	-55°C to +120°C
Dielectric Strength (metric)	14kV/mm according to ASTM D2671	16 kV/mm	15 kV/mm	15 kV/mm	20 kV/mm to ASTM D2671
Flexibility	Semi rigid	Semi rigid	Flexible	Semi rigid	Flexible
Flammability	VG 95343	ASTM D635	VG 95343	ASTM D635	ASTM D635
Specification	VG 95343 Part 6, 7, 8, 9 DEF STAN 59-97 / 3	MIL-I-81765/1 Type 1 DEF STAN 59-97 / 3	VG 95343 part 29, 30 NAVSEA 5617649 DEF STAN 59-97/3	ESI 09/11Det Norske Veritas	SCX15112

LFH (Limited Fire Hazard)

* Standard material

RoHS

Other materials available on request.

Adhesives for moulded parts



The newly developed W24 epoxide resin adhesive can be used in the temperature range from –75°C to +200°C. The moulded parts are factory coated with W24 adhesive In combination with the material G, i.e. as GW24, the adhesive has approval to VG 95343, Part 18 and Part 19.

The V9500 two-component adhesive with approval to VG 95343 Part 15 can be supplied in 50g cartridges for the practical V9500 dispensing guns (see page 3/43).

Lining with hot melt and epoxy adhesive for our range of materials on request. The LFH material H is lined with W21 (LFH) hot melt adhesive.

Adhesives and mastics

B8 Material is coated with Hot Melt Adhesive (WM250) as standard, and is applied either as a spiral code W2, or smooth coat code W. Alternatively shapes are coated with Black Mastic code WM252.

M1 and K, are coated with Anti-track Mastic (Red), code WM253.

Adhesive Specifications

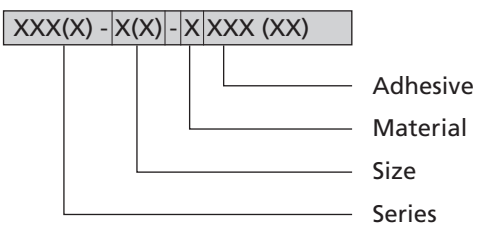
Description	WM250	W8	W21	W24
Material	Factory applied hot melt adhesive	Hot melt adhesive	Modified polymide hot melt adhesive	One part high performance epoxy
Application	Good general purpose adhesive	High temperature hot melt that compliments H material	High temperature hot melt adhesive	Specially modified to meet military cable and harness needs
Softening Point	95°C to ASTM E28	110°C to ASTM E28	120°C to ASTM E28	N/A
Operating Temperature	-50°C to +80°C	-55°C to +105°C	-55°C to +120°C	-70°C to +200°C
Peel strength	VG95343 Pt 14	VG95343 Pt 14	VG95343 Pt 14	VG95343 Pt 14
Water absorbtion at 25 °C	ASTM D570	ASTM D570	ASTM D570	ASTM D570
Solvent resistance	Fair under splash conditions	Fair under splash conditions	Very good under most conditions especially saline	Very good to excellent under most conditions
Specification	Def. Stan 59-97 issue 3	Def. Stan 59-97 issue 3	VG 95-343 part 29	VG 95-343 part 29 Def. Stan 59-97 issue 3

RoHS RoHS RoHS RoHS

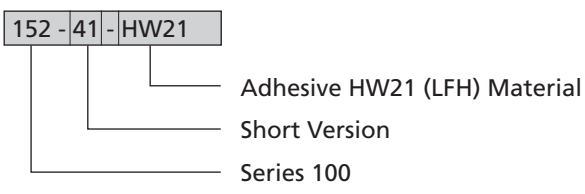
Data sheets are available for the full range of adhesives and materials.

Order Example

Type:

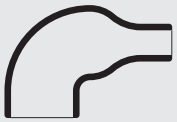
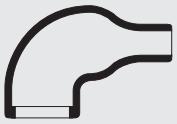
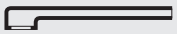


Example:



Heat Shrink Moulded Shape Profiles

Bulbous Boots Product Overview		Page
Bottle Shapes* Helashrink 150 Series, with rib, VG		
Bottle Shapes Helashrink 100 Series, without rib		3/38
Bottle Shapes Helashrink 100 Series, with rib, MIL		
Long Outlet Shape* Helashrink 130 Series, with rib, low profile, VG		
Bottle Shapes* Helashrink 170 Series, with rib, VG		
2-Way Outlet Shapes* Helashrink 200 Series, low profile		
Bottle Shapes* Helashrink 190 Series, with external ribs, VG		
2-Way Outlet Shapes Helashrink 200 Series, VG		3/42
2-Way Outlet Shapes Helashrink 200 Series, in line, low voltage		3/42
3-Way Outlet Shapes Helashrink 300 Series, VG		3/42
3-Way Outlet Shapes Helashrink 300 Series, in line, low voltage		3/42
4-Way Outlet Shapes Helashrink 400 Series, VG		3/43

Bulbous Boots Product Overview		Page
4-Way Outlet Shapes Helashrink 400 Series, in line, low voltage		3/43
5-Way Outlet Shapes* Helashrink 500 Series, in line, low voltage		
6-Way Outlet Shapes* Helashrink 600 Series, in line, low voltage		
Right-Angle Shapes Helashrink 1100 Series, with rib, VG		3/40
Right-Angle Shapes* Helashrink 1100 Series, without rib		
Right-Angle Shapes Helashrink 1100 Series, with rib, MIL		3/40
Right-Angle Shapes Helashrink 1100 Series, with rib, low profile, VG style/MIL style		3/40
Right-Angle Shapes Helashrink 1100 Series, with rib, low profile, high ratio, VG		3/40
T-Shapes Helashrink 1200 Series, VG		3/43
T-Shapes* Helashrink 1200 Series, Offset, VG		
Angled T-Shapes Helashrink 1300 Series, 30° & 45° angle, VG		3/44

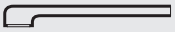
* Other moulded shape profiles available on request

All dimensions in mm. Subject to technical changes.

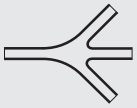
Heat Shrink Moulded Shape Profiles



Low Profile Boots Product Overview

Convolute Boots Helashrink 313C Series, with adapter lip	
Shim Boots Helashrink 313E Series, without adapter lip	
Straight Boots Helashrink 313F Series, with adapter lip	
Right Angle Boots Helashrink 333F Series, with adapter lip, 90° angle	

Low Profile Boots Product Overview

Transition Boots Helashrink 412H Series, side breakout	
Transition Boots Helashrink 492H Series, 1 to 2 cables	
Transition Boots Helashrink 573H Series, 1 to 3 cables	

All dimensions in mm. Subject to technical changes.
Available on request

One Step to the Web!

Helashrink 100 Series

Straight plug-and-socket connector terminal casing. This style is used in conjunction with circular grooved adaptor, providing protection against environmental stresses. The inside lip has been designed to provide extra reinforced stress relief. Special fitting 199-4-G for audio plugs has external ribs for an improved grip.

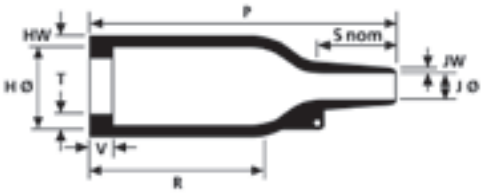


Recovered 199-4-G, VG style shape for small audio connectors with external ribs for improved grip.



150 series boot recovered on to connector.





Technical Table

Code	H min a	H max b	J a	J b	P ± 10%	R ± 10%	S nom	HW ± 20%	JW ± 20%	V ± 10%	T ± 20%
113-1-G	10.7	7.9	4.6	2.0	25.4	14.5	–	1.3	1.0	–	1.0
113-4-G	10.7	7.9	4.6	2.0	25.4	14.5	4.6	1.3	1.0	3.0	1.0
152-41-G	24.0	10.5	24.0	6.0	26.0	9.0	10.0	1.6	0.5	3.0	1.0
152-42-G	24.0	10.5	24.0	6.0	38.0	21.0	10.0	1.6	0.5	3.0	1.0
153-41-G	25.0	14.0	9.0	3.5	40.0	13	16.0	1.8	0.5	3.0	1.0
153-42-G	25.0	14.0	9.0	3.5	55.0	28	16.0	1.8	0.5	3.0	1.0
154-41-G	30.0	14.0	30.0	6.0	43.0	20	1.0	1.8	1.0	3.0	1.0
154-42-G	30.0	14.0	30.0	6.0	55.0	32.0	13.0	1.8	1.0	3.0	1.0
155-41-G	31.0	18.0	31.0	7.0	47.0	15.0	18.0	1.8	1.0	3.0	1.0
155-42-G	31.0	10.5	31.0	7.0	67.0	35.0	18.0	1.8	1.0	3.0	1.0
156-41-G	36.0	22.5	36.0	8.5	60.0	22.0	20.0	2.0	1.0	3.0	1.0
156-42-G	36.0	22.5	36.0	8.5	80.0	42.0	20.0	2.0	1.0	3.0	1.0
157-41-G	43.0	28.0	43.0	10.0	60.0	21.0	20.0	2.2	1.0	3.0	1.7
157-42-G	43.0	28.0	43.0	10.0	79.0	41.0	20.0	2.2	1.0	3.0	1.7
157-43-G	43.0	28.0	43.0	10.0	99.0	61.0	20.0	2.2	1.0	3.0	1.7
158-41-G	60.0	35.0	60.0	16.0	90.0	32.0	38.0	3.2	1.5	3.0	1.7
158-42-G	60.0	35.0	60.0	16.0	110.0	52.0	38.0	3.2	1.5	3.0	1.7
158-43-G	60.0	35.0	60.0	16.0	130.0	72.0	38.0	3.2	1.5	3.0	1.7
159-41-G	66.0	45.0	66.0	17.0	130.0	50.0	50.0	3.8	2.0	3.0	2.0
159-42-G	66.0	45.0	66.0	17.0	150.0	70.0	50.0	3.8	2.0	3.0	2.0
159-43-G	66.0	45.0	66.0	17.0	171.0	90.0	50.0	3.8	2.0	3.0	2.0
160-41-G	82.0	58.0	82.0	27.0	137.0	37.0	62.0	3.8	3.8	3.0	2.0
160-42-G	82.0	58.0	82.0	27.0	158.0	58.0	62.0	3.8	3.8	3.0	2.0
160-43-G	82.0	58.0	82.0	27.0	213.0	113.0	62.0	3.8	3.8	3.0	2.0
199-4-G	17.5	14.0	7.0	4.3	70.0	35.0	20.0	1.8	0.5	1.5	1.0

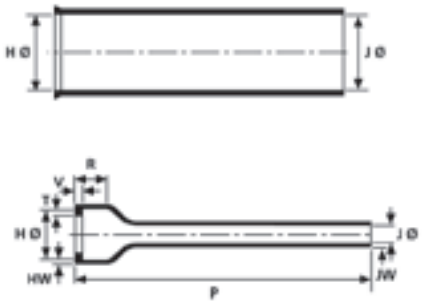
All dimensions in mm. Subject to technical changes.

These moulded shapes are also available in various materials from our range, e.g. B7, H, L and J on request.
In addition, the moulded shapes can also be supplied with an inner coating from our range of hot-melt and epoxy adhesives,eg, W24, W1, W8 and WM250.

a *As supplied*
b *Recovered*

Helashrink 100 Series

Straight plug-and-socket connector terminal casing has protection against environmental stresses for circular plug connectors, according to VG. The inside lip is used for a reinforced stress relief.





135-1-G as supplied / fully recovered.

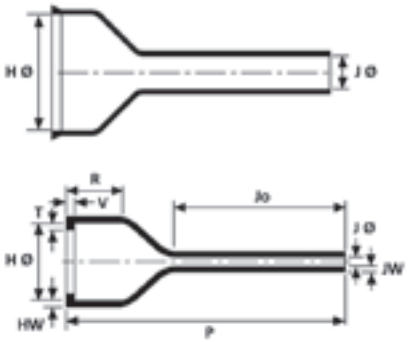
Technical Table

Code	H min a	H max b	J a	J b	P ± 10% = overall length	R ± 10%	HW ± 20%	JW ± 20%	V ± 10%	T ± 10%
129-1-G	22.0	12.0	22.0	6.5	76.0	12.0	1.1	1.1	3.0	1.0
130-1-G	22.5	15.0	22.5	7.5	83.0	12.0	1.5	1.1	3.0	1.0
131-1-G	29.0	19.0	29.0	8.5	89.0	12.0	1.1	1.1	3.0	1.0
132-1-G	34.0	23.0	34.0	10.0	102.0	12.0	1.1	1.1	3.0	1.0
133-1-G	37.0	30.0	37.0	11.0	108.0	14.0	2.0	1.1	3.0	1.7
134-1-G	43.5	34.0	43.5	12.0	114.0	15.0	2.0	1.1	3.0	1.7
135-1-G	50.0	41.0	50.0	14.5	118.0	15.0	2.3	1.4	3.0	1.7
136-1-G	62.5	47.0	62.5	18.0	121.0	16.0	2.5	1.4	3.0	2.0
138-1-G	69.0	60.0	69.0	20.0	127.0	16.0	2.5	1.4	3.0	2.0

All dimensions in mm. Subject to technical changes.

These moulded shapes are also available in various materials from our range, e.g. B7, H, Land J on request.
In addition, the moulded shapes can also be supplied with an inner coating from our range of hot-melt and epoxy adhesives e.g. W24,W1,W8 and WM250.

a *As supplied*
b *Recovered*





177-1-G as supplied / fully recovered.

Technical Table

Code	H min a	H max b	J a	J b	P ± 10% = overall length	R ± 10%	HW ± 20%	JW ± 20%	V ± 10%	T ± 10%
176-1-G	19.3	13.0	6.3	2.1	60.2	11.7	1.5	1.1	3.0	1.0
177-1-G	26.1	19.1	7.6	2.6	74.2	12.2	1.8	1.1	3.0	1.0
178-1-G	34.2	26.0	9.6	3.1	84.3	12.2	1.8	1.1	3.0	1.0
179-1-G	43.6	34.1	11.4	3.6	99.6	12.2	1.8	1.1	3.0	1.7
187-1-G	81.5	67.0	81.5	23.0	133.0	16.0	2.5	1.4	3.0	2.0

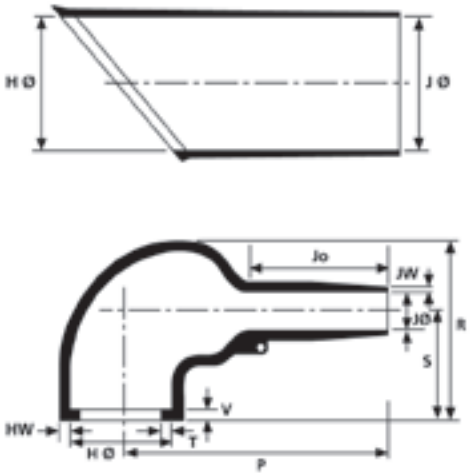
All dimensions in mm. Subject to technical changes.

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In addition, the moulded shapes can also be supplied with an inner coating from our range of hot-melt and epoxy adhesives e.g. W24, W1, W8 and WM250.

a *As supplied*
b *Recovered*

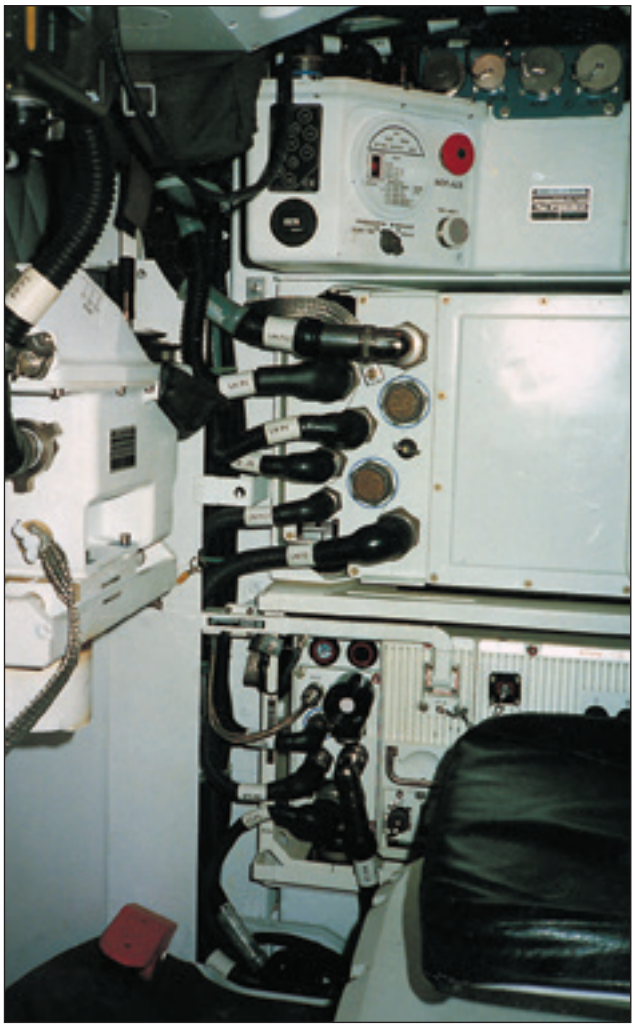
Helashrink 1100 Series

Right-angle, VG style shape with rib. This style provides connector cable strain relief and can be installed directly onto connector rear thread.





1152-4-G recovered on to a connector.



Space saving right-angle shapes used here in a military application.

Technical Table

Code	H min a	H max b	J a	J b	P ± 10%	R ± 10%	S ± 10%	JO ± 10%	HW ± 20%	JW ± 20%	V ± 10%	T ± 10%
1108-1-G	16.5	7.9	16.5	3.8	17.3	20.1	15.2	4.1	1.0	1.0	–	–
1108-4-G	16.5	7.9	16.5	3.8	17.3	20.1	15.2	4.1	1.0	1.0	3.0	1.0
1152-4-G	24.0	10.5	24.0	6.0	26.0	25.0	19.0	10.0	1.3	0.5	3.0	1.0
1154-4-G	30.0	14.5	30.0	6.0	32.0	27.0	20.0	12.0	1.5	0.8	3.0	1.0
1155-4-G	31.0	18.0	31.0	7.0	40.0	31.0	31.0	15.0	1.8	1.0	3.0	1.0
1155-4-G	36.0	22.5	36.0	8.5	46.0	38.0	26.0	15.0	1.8	1.0	3.0	1.0
1157-4-G	43.0	28.5	43.0	10.0	55.0	45.0	30.0	16.0	2.0	1.0	3.0	1.7
1158-4-G	60.0	35.0	60.0	16.0	80.0	54.0	35.0	30.0	3.3	1.5	3.0	1.7
1159-4-G	66.0	45.0	66.0	17.0	108.0	68.0	42.0	51.0	3.8	2.0	3.0	2.0
1160-4-G	82.0	61.0	82.0	25.0	118.0	84.0	52.0	39.0	4.0	4.0	3.0	2.0

All dimensions in mm. Subject to technical changes.

These moulded shapes are also available in various materials from our range e.g. B7, H, L and J on request.
In addition, the moulded shapes can also be supplied with an inner coating from our range of hot-melt and epoxy adhesives e.g. W24,W1,W8 and WM250.

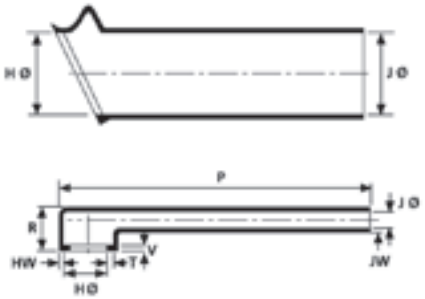
a *As supplied*
b *Recovered*

Helashrink 1100 Series

Right-angle, low profile shape with rib, VG/ Mil style, often used on airborne harnesses to achieve low profile, compact strain relief and mechanical protection.

The photo below shows a shape style that provides connector strain relief and is used in applications of partially loaded connectors with small cable diameters.





1123-1-G Supplied and recovered.

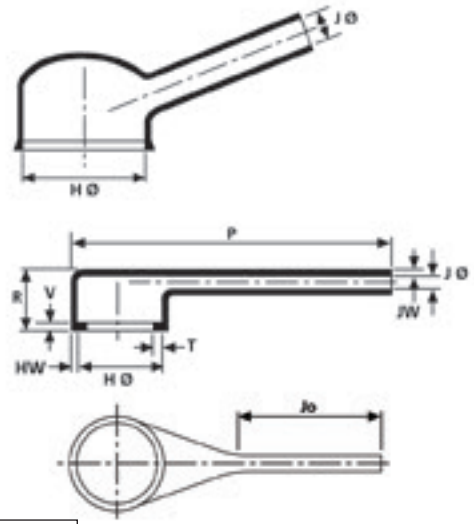
Technical Table

Code	H min a	H max b	J a	J b	P ± 10% = overall length	R ± 10%	HW ± 20%	JW ± 30%	V ± 10%	T ± 10%
1121-1-G	22.0	12.0	22.0	6.5	70.0	19	1.5	1.1	3.0	1.0
1122-1-G	25.5	15.0	25.5	7.5	79.0	20.0	1.0	1.1	3.0	1.0
1123-1-G	29.0	19.0	29.0	8.5	89.0	21.0	1.8	1.1	3.0	1.0
1124-1-G	34.0	23.0	34.0	10.0	102.0	22.0	1.8	1.1	3.0	1.0
1125-1-G	37.0	30.0	37.0	11.0	108.0	24.0	2.0	1.1	3.0	1.7
1126-1-G	43.5	34.0	43.5	12.0	121.0	27.0	2.0	1.1	3.0	1.7
1127-1-G	50.0	41.5	50.0	14.5	132.0	30.0	2.3	1.4	3.0	1.7
1128-1-G	62.5	47.0	62.5	18.0	133.0	33.0	2.5	1.4	3.0	2.0
1129-1-G	69.0	60.0	69.0	20.0	137.0	35.5	2.5	1.4	3.0	2.0

All dimensions in mm. Subject to technical changes.

These moulded shapes are also available in various materials from our range e.g. B7, H, L and J on request.
In addition, the moulded shapes can also be supplied with an inner coating from our range of hot-melt and epoxy adhesives e.g. W24, W1, W8 and WM250.

a *As supplied*
b *Recovered*





1135-1-G Supplied and recovered.

Technical Table

Code	H min a	H max b	J a	J b	P ± 10% = overall length	R ± 10%	HW ± 20%	JW ± 20%	V ± 10%	T ± 10%
1133-1-G	19.0	13.0	6.0	2.0	45.0	16.0	1.5	1.1	3.0	1.0
1134-1-G	26.0	19.0	7.5	2.5	67.0	18.0	1.8	1.1	3.0	1.0
1135-1-G	34.0	26.0	9.5	3.0	81.0	19.0	1.8	1.1	3.0	1.0
1136-1-G	43.5	34.0	11.5	3.5	116.0	21.0	1.8	1.1	3.0	1.7
1141-1-G	82.0	67.0	82.0	23.0	140.0	45	2.5	1.4	3.0	2.0

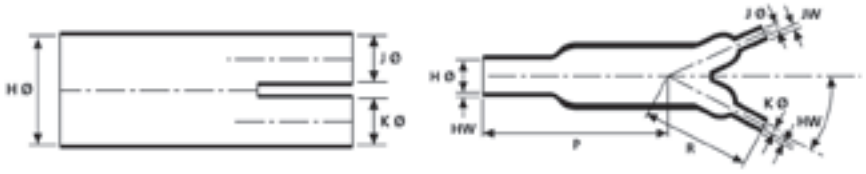
All dimensions in mm. Subject to technical changes.

These moulded shapes are also available in various materials from our range e.g. B7, H, L and J on request.
In addition, the moulded shapes can also be supplied with an inner coating from our range of hot-melt and epoxy adhesives e.g. W24, W1, W8 and WM250.

a *As supplied*
b *Recovered*

Helashrink 200 Series

Branching parts are used for easy, time-saving insulation of the branch point of a cable where it is split into single wires. Branching parts with hot-melt adhesive also serve to relieve the mechanical tension in cable harnesses.





Two-way outlet shape 203-1-G as supplied and recovered.

Technical Table

Code	H min a	H max b	J/K a	J/K b	P ± 10% = overall length	R ± 10%	HW ± 30% b	JW/KW ± 30%
201-1-G	19.0	9.4	6.4	14.0	50.8	30.5	–	–
203-1-G	27.0	12.0	13.0	6.0	80.0	43.0	2.5	1.5
204-1-G	39.0	18.0	27.0	12.0	131.0	81.0	3.0	2.5
206-1-G	13.0	6.0	7.0	3.0	41.0	19.0	1.5	1.0
211-1-G	56.0	26.0	27.0	13.0	173.0	94.0	4.5	2.5
212-1-G	14.5	8.0	8.5	5.5	136.0	63.0	2.5	2.0
213-1-G	17.3	7.9	11.1	7.9	140.0	64.0	2.3	1.0

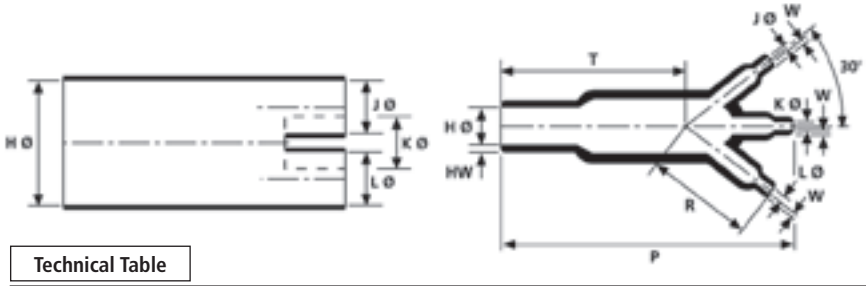
All dimensions in mm. Subject to technical changes.

These moulded shapes are also available in various materials from our range e.g. B7, H, L and J on request. In addition, the moulded shapes can also be supplied with an inner coating from our range hot-melt and epoxy adhesives e.g. W24, W1, W8 and WM250.

a *As supplied*
b *Recovered*

300 Series Breakout Boots

Branching parts are used for easy, time-saving insulation of the branch point of a cable where it is split into single wires. Branching parts with hot-melt adhesive also serve to relieve the mechanical tension in cable harnesses.





304-1-G as supplied / fully recovered

Technical Table

Code	H min a	H max b	J/K/L min	J/K/L max	P ± 10% = overall length	R ± 10%	HW ± 30% b	JW/KW ± 30%	JW/KW ± 30%
306-1-G	13.0	6.5	6.5	3.5	46.0	25.0	1.5	1.0	21.0
310-1-G	38.5	19.0	19.0	10.0	135.0	74.0	3.0	2.0	62.0
311-1-G	55.5	25.5	27.0	12.5	192.0	103.0	4.5	3.0	89.0

All dimensions in mm. Subject to technical changes.

These moulded shapes are also available in various materials from our range e.g. B7, H, L and J on request. In addition, the moulded shapes can also be supplied with an inner coating from our range of hot-melt and epoxy adhesives e.g. W24, W1, W8 and WM250.

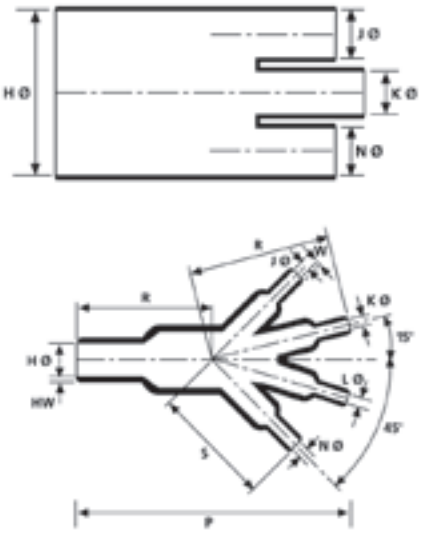
a *As supplied*
b *Recovered*

400 Series Breakout Boots

Branching parts are used for easy, time saving insulation of the branch point of a cable where it is split into single wires. Adhesive lined branching parts also serve to relieve the mechanical tension in cable harnesses.



403-1-G as supplied / recovered.



Technical Table

Code	H min a	H max b	J/K/L/ N a	J/K/L/ N b	R ± 10%	S ± 10%	T ± 10%	HW ± 30% b	JW ± 30%	P ± 15% = overall length
403-1-G	27.0	13.0	13.0	7.0	52.0	45.0	49.0	1.5	1.5	102.0
413-1-G	38.5	19.0	19.0	10.0	72.0	65.0	75.0	1.8	1.0	150.0

All dimensions in mm. Subject to technical changes.

These moulded shapes are also available in various materials from our range e.g. B7, H, L and J on request.
In addition, the moulded shapes can also be supplied with an inner coating from our range of hot-melt and epoxy adhesives e.g. W24, W1, W8 and WM250.

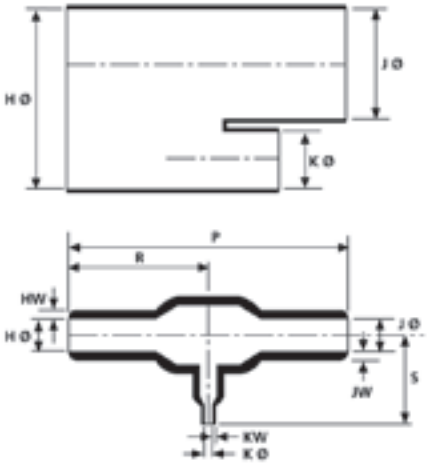
a *As supplied*
b *Recovered*

Helashrink 1200 Series

90° (right angled) Transition parts (T-joints) are used for a simple time-saving insulation of the branch point of a cable, where it is split into single wires. Adhesive lined T-joints also serve to relieve the mechanical tension in cable harnesses.



Moulded shape 1202-1-G.



Technical Table

Code	H min a	H max b	J a	J b	K a	K b	P ± 10% = overall length	R ± 10%	S ± 10%	KW ± 20% b	HW ± 20%	JW ± 20%
1201-1-G	17.7	8.9	17.7	8.9	10.1	5.1	47.5	23.6	23.6	1.0	1.5	1.5
1203-1-G	13.2	6.0	13.2	6.0	6.5	3.0	52.0	26.0	19.3	1.0	1.5	1.5
1204-1-G	13.0	7.5	6.5	4.0	6.5	4.0	56.0	33.0	19.3	1.0	1.5	1.0
1205-1-G	17.7	8.9	17.1	8.9	7.6	3.8	50.8	25.4	25.4	1.0	1.5	1.5
1206-1-G	6.6	3.0	6.6	3.0	6.6	3.0	29.7	14.7	14.7	1.0	1.0	1.0
1207-1-G	26.9	12.4	26.9	12.4	26.9	12.4	120.1	55.9	55.9	2.5	2.5	2.5
1209-1-G	27.0	12.4	27.0	12.4	13.2	6.0	108.0	54.0	38.6	1.5	2.5	2.5
1216-1-G	33.0	13.0	16.5	6.5	16.5	6.5	97.0	54.0	38.5	1.5	2.5	1.5

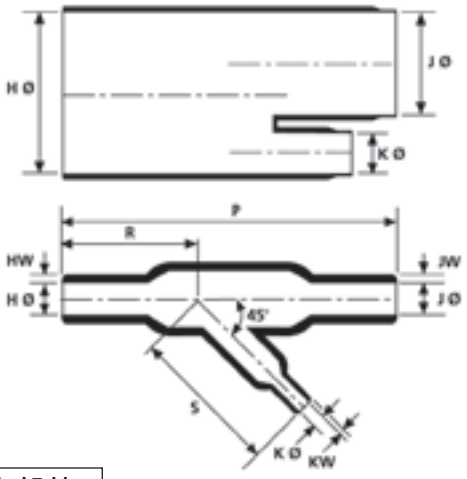
All dimensions in mm. Subject to technical changes.

These moulded shapes are also available in various materials from our range e.g. B7, H, L and J on request.
In addition, the moulded shapes can also be supplied with an inner coating from our range of hot-melt and epoxy adhesives e.g. W24, W1, W8 and WM250.

a *As supplied*
b *Recovered*

Helashrink 1300 Series

45° Transition parts (Y-joints) are used for a simple time saving insulation of the branch point of a cable where it is divided into single wires. Y-joints with hot-melt adhesive also serve to relieve the mechanical tension in cable harnesses.





Angled T shape 1303-1-G as supplied / recovered.

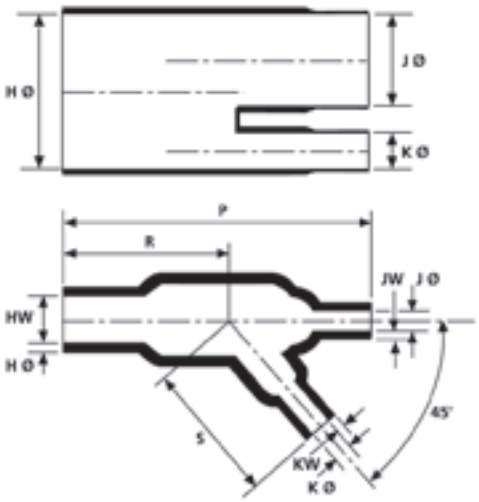
Technical Table

Code	H min a	H max b	J a	J b	K a	K b	P ± 10% = overall length	R ± 10%	S ± 10%	KW ± 20% b	HW ± 20%	JW ± 20%
1301-1-G	13.0	7.0	13.0	7.0	7.0	3.5	50.0	23.0	23.0	1.0	1.5	1.5
1302-1-G	27.0	13.0	27.0	13.0	7.0	3.5	92.0	41.0	36.0	1.0	2.5	2.5
1303-1-G	27.0	14.0	27.0	14.0	13.0	7.5	145.0	70.0	54.0	1.5	1.5	1.5
1311-1-G	30.4	15.0	30.4	15.0	20.3	10.0	82.6	32.0	51.0	1.8	2.5	2.5

All dimensions in mm. Subject to technical changes.

These moulded shapes are also available in various materials from our range e.g. B7, H, L and J on request. In addition, the moulded shapes can also be supplied with an inner coating from our range of hot-melt and epoxy adhesives e.g. W24, W1, W8 and WM250.

a *As supplied*
b *Recovered*





Angled T shape 1306-1-G as supplied / recovered.

Technical Table

Code	H min a	H max b	J a	J b	K a	K b	P ± 10% = overall length	R ± 10%	S ± 10%	KW ± 20% b	HW ± 20%	JW ± 20%
1306-1-G	13.0	6.0	6.5	3.0	6.5	3.0	45.0	23.0	21.0	1.0	1.5	1.0

All dimensions in mm. Subject to technical changes.

These moulded shapes are also available in various materials from our range e.g. B7, H, L and J on request. In addition, the moulded shapes can also be supplied with an inner coating from our range of hot-melt and epoxy adhesives e.g. W24, W1, W8 and WM250.

a *As supplied*
b *Recovered*

Two Component Epoxy Resin Adhesive V9500

This high performance, VG-approved, two part epoxy adhesive has been developed to meet the military requirements associated with heat shrinkable components for wire and cable harnesses. It has a very good resistance against most solvents and fuels, even at elevated temperatures. The two-part epoxy adhesive is available in two different packages.

When heat is applied during the shrinking of the moulded shape the two part components react, which results in a high performance bond.



Two-component epoxy adhesive V9500

Material Data

Material	Epoxy resins (EP)
Colour	Black (BK)
Curing Temperature °C	+135°C
Curing Time	24 hours at +25°C, 2 hours at +85°C
Operating Temperature	-75°C to +150°C
Specification	VG 95343 T15 A0001

RoHS

HF (halogenfree)

VG Please Note for Product Specific Approvals please refer to Appendix

V9500 Applicator Gun

The V9500 applicator gun allows for clean processing and individual metering. It is employed in conjunction with the cartridges (627-95001 or 627-95002) and the mixing nozzles.

The V9500 lockable cartridges contain 50gms and are available with or without the processing set. The processing set consists of emery cloth, a small mixing bowl and a wooden spatula.

They can be re-used even after a lapse of several days occurs, because the closure prevents the adhesive from hardening.



The V9500 applicator gun guarantees the clean and precise coating of special fittings.

Technical Table

Code	Description
V9500 Epoxy adhesive	Two-component adhesive incl. processing set
V9500 Epoxy adhesive	Two-component adhesive
V9500 Applicator gun	Dosing gun
V9500 Applicator nozzle	Mixing nozzles

All dimensions in mm. Subject to technical changes.

HEK Cable End Caps

Features and Benefits

End caps are used to seal cables during storage or transportation. HEK end caps can be used as an insulating cap for live LV cables (0.6/1kV), and the cap is marked with a lightning flash to indicate a live circuit. The adhesive lining provides an excellent environmental seal.

End caps can be fitted with air valves for certain pressurised cable applications.

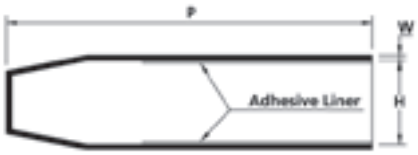
The high shrink ratio minimises the number of end cap sizes needed.



The appropriate end cap for every cable diameter, and cable type.

Application

End caps are suitable for use on both polymeric and paper insulated, lead jacketed cables which may include aluminium or steel armouring.



Material Data

Material	Polyolefin, Chemically cross linked (POX)
Colour	Black (BK)
Shrink Ratio	up to 3:1
Minimum Shrink Temperature (Metric)	+135°C
Operating Temperature	-55°C to +70°C
Dielectric Strength (metric)	15 kV/mm
Flammability	ASTM D635

RoHS

Technical Table

Code	Recomm. application		H min	H max	Fully recovered	
	From	To	a ±10%	b ±10%	P ± 10%	HW ± 20%
Standard Range Cable Cap						
1612-1-B8W	4.0	8.0	10.0	4.0	33.5	2.0
1613-1-B8W	8.0	16.0	20.0	7.5	55.3	2.3
1614-1-B8W2	16.0	32.0	40.0	15.0	90.0	3.0
1615-1-B8W2	26.0	51.0	63.0	25.0	143.0	3.3
1615-2-B8W2	26.0	44.0	55.0	25.0	143.0	3.3
1617-1-B8W2	32.0	61.0	76.0	30.0	158.0	4.0
1616-1-B8W2	48.0	80.0	100.0	45.0	162.0	4.0
1616-7-B8W	48.0	100.0	125.0	45.0	162.0	4.0
Special Range Cable Cap						
1618-1-B8W	6.0	11.0	14.0	6.0	55.3	2.3
1601-1-B8W	10.0	19.0	23.8	9.4	89.0	2.0
1620-1-B8W	13.0	28.0	35.0	12.7	184.0	3.3
1608-1-B8W	70.0	130.0	159.0	63.5	127.0	3.3

All dimensions in mm. Subject to technical changes.

a *As supplied*
b *Recovered*

HEV Cable Breakout Boots

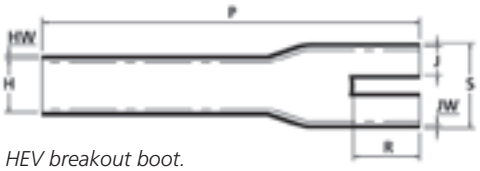
Features and Benefits

Cable breakout boots are designed for insulating and sealing a cable crotch, or conduit system, and provide excellent resistance to abrasion and weathering.

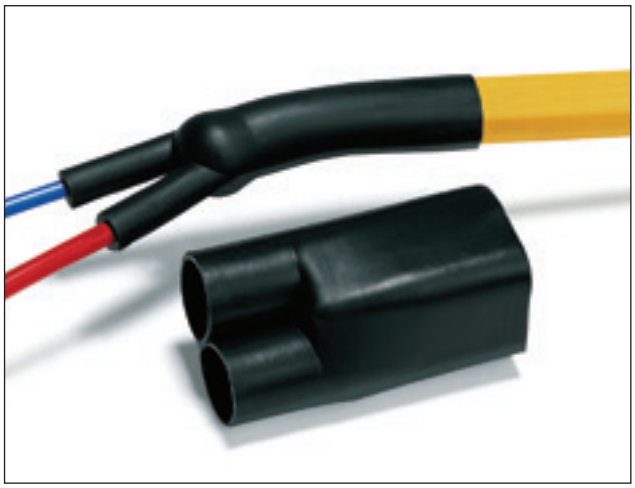
Application

Cable breakouts are manufactured from a tough cross linked polyolefin containing a flame retardant. This allows the breakouts to be used for both interior and exterior applications. They offer excellent electrical and mechanical protection.

Cable breakouts are supplied with an adhesive inner coating for reliable environmental sealing, and are available for 2, 3, 4, 5 and 6 core cables.



HEV breakout boot.



HEV breakout boot for two-core cable.

Material Data

Material	Polyolefin, Chemically cross linked (POX)
Colour	Black (BK)
Shrink Ratio	up to 3:1
Dielectric Strength (metric)	15 kV/mm
Minimum Shrink Temperature (Metric)	+135°C
Operating Temperature	-55°C to +70°C
Flammability	ASTM D635
Specification	Det Norske Veritas

Technical Table

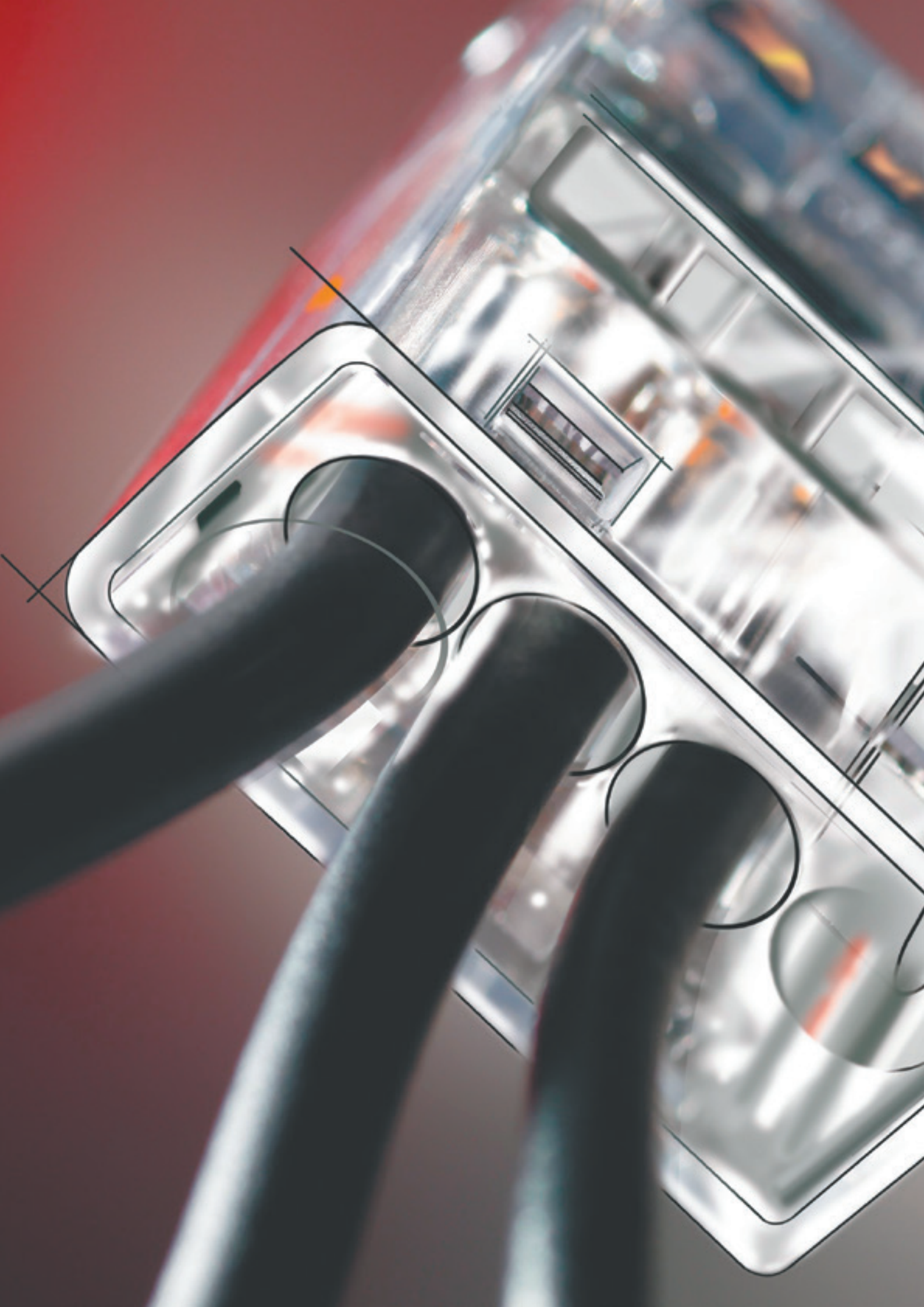
Code	Recomm. application (mm²)		H min	H max	J a	J b	Recovered				
	From	To	a ±10%	b ±10%	±10%	±10%	P ± 10%	R ± 10%	S nom	HW ± 20%	JW ± 20%
2 Finger Breakout Boot											
216-1-B8W	2.5	10	21.0	9.4	9.0	2.8	76.5	20.0	15.0	1.6	1.6
223-2-B8W	4	35	33.0	9.4	17.5	4.1	94.0	30.0	20.0	1.5	1.2
218-1-B8W	50	150	50.0	22.9	21.0	7.6	119.0	34.0	30.0	3.2	3.2
219-1-B8W	185	400	87.0	38.1	43.0	12.7	141.5	42.5	44.0	3.8	3.8
3 Finger Breakout Boot											
318-1-B8W	4	16	25.0	9.1	9.0	3.0	76.5	20.0	16.0	2.5	2.5
319-1-B8W	16	35	31.0	17.5	15.0	4.6	93.5	28.5	23.0	2.9	2.9
320-2-B8W2	50	150	63.0	22.5	26.0	9.0	180.0	44.0	37.0	3.0	2.0
324-1-B8W2	150	300	90.0	34.0	35.0	14.0	200.0	50.0	54.0	3.0	2.0
342-1-B8W2	185	400	110.0	35.0	40.0	17.5	230.0	45.0	55.0	4.0	3.5
341-1-B8W2	400	400	125.0	59.0	50.8	25.4	283.0	71.0	75.0	3.8	3.8
4 Finger Breakout Boot											
442-1-B8W	2.5	10	28.0	9.0	9.0	1.8	78.0	17.0	20.0	2.7	2.0
408-2-B8W2	4	35	35.0	12.0	15.0	3.0	95.0	24.0	22.0	2.5	2.0
409-2-B8W2	35	70	47.4	22.9	21.5	6.4	165.0	38.1	38.1	4.1	3.3
418-4-B8W2	70	150	60.0	22.9	30.0	6.4	202.0	38.1	38.0	4.1	3.3
444-1-B8W2	150	300	78.7	35.6	38.1	12.5	240.0	55.0	55.0	4.0	3.5

All dimensions in mm, except for "mm²". Subject to technical changes.

a *As supplied*
b *Recovered*

Please Note for Product Specific Approvals please refer to Appendix

Notes



Accessories

	Page
Flexiform Edge Protection Grommet Strip	4/1
PVC Beading Edge Protection Strip	4/2
Edge Protection Grommets	4/2
Push-on Caps and Elbow Grommets	4/4
DinRail	4/5
DinRail Cutter	4/6
Connector Strips	4/6
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HelaCon Plus	4/7
Line Taps	4/9
Wall Boxes	4/10
Polypropylene Wall Boxes	4/12

RoHS The restriction of the use of certain hazardous substances in electrical and electronic equipment

HF (halogenfree) Halogen Free

LFH (Limited Fire Hazard) Limited Fire Hazard

Flexiform Edge Protection Grommet Strip

Features and Benefits

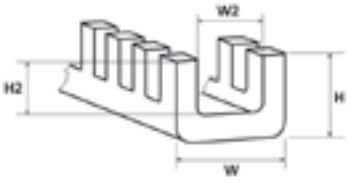
Flexiform grommet strip is applied to the panel edge and is easily installed without the need for adhesives. The close-fitting profile provides effective protection for cables by preventing any chafing.

Application

Flexiform grommet strip is used to protect cables routed through sharp-edged cut-out sections.



Optimal protection of cables and wires at panel edges.



Flexiform grommet strip.

Material Data

RoHS

Material	Polyamide 6 (PA6)
Operating Temperature	-60°C to +95°C Continuous, (+130°C for 200 h)
Flammability	Halogen free

HF (halogenfree)

Material Data

RoHS

Material	Polyethylene (PE)
Operating Temperature	-30°C to +80°C Continuous, (+120°C for 200 h)
Flammability	Halogen free

HF (halogenfree)

Material Data

RoHS

Material	Polytetrafluoroethylene (PTFE)
Operating Temperature	-60°C to +260°C Continuous, (+350°C for 200 h)
Flammability	Non burning
Certification	PAN 6480-A

Technical Table

Code	Panel Thickness Min. mm	Panel Thickness Max. mm	Width (W)	Width (W2)	Height (H)	Height (H2)	Reel Length	Material	Colour
G51PA	0.4	1.5	3.9	1.5	4.3	2.7	25m	PE	Natural (NT)
G51PB	1.3	2.4	4.6	2.4	4.3	2.7	25m	PE	Natural (NT)
G51PC	2.2	3.4	5.7	3.5	4.3	2.7	25m	PE	Natural (NT)
G51PD	3.3	5.0	8.4	5.1	6.2	4.3	25m	PE	Natural (NT)
G51PE	4.9	6.7	9.9	6.7	6.4	4.5	25m	PE	Natural (NT)
G51PF	6.5	8.2	11.4	8.3	6.8	4.8	25m	PE	Natural (NT)
G51PG	8.0	10.0	13.2	10.1	6.8	4.8	25m	PE	Natural (NT)
G51PH	9.7	13.2	16.4	13.2	6.8	4.8	25m	PE	Natural (NT)
G51NA	0.4	1.5	3.9	1.5	4.3	2.7	25m	PA6	Natural (NT)
G51NB	1.3	2.4	4.6	2.4	4.3	2.7	25m	PA6	Natural (NT)
G51NC	2.2	3.4	5.7	3.5	4.3	2.7	25m	PA6	Natural (NT)
G51ND	3.3	5.0	8.4	5.1	6.2	4.3	25m	PA6	Natural (NT)
G51NE	4.9	6.7	9.9	6.7	6.4	4.5	25m	PA6	Natural (NT)
G51NF	6.5	8.2	11.4	8.3	6.8	4.8	25m	PA6	Natural (NT)
G51NH	9.7	13.2	16.4	13.2	6.8	4.8	25m	PA6	Natural (NT)
G51TA	0.4	1.5	3.9	1.5	4.3	2.7	3m	PTFE	Natural (NT)
G51TB	1.3	2.4	4.6	2.4	4.3	2.7	3m	PTFE	Natural (NT)
G51TC	2.2	3.4	5.7	3.5	4.3	2.7	3m	PTFE	Natural (NT)
G51TD	3.3	5.0	8.4	5.1	6.2	4.3	3m	PTFE	Natural (NT)
G51TE	4.9	6.7	9.9	6.7	6.4	4.5	3m	PTFE	Natural (NT)
G51TG	8.0	10.0	13.2	10.1	6.8	4.8	3m	PTFE	Natural (NT)
G51TH	9.7	13.2	16.4	13.2	6.8	4.8	3m	PTFE	Natural (NT)

All dimensions in mm. Subject to technical changes.
Flexiform grommet strips are not self-adhesive and therefore not suitable for outer edges.
Minimum order quantities on certain sizes.

PVC Beading Edge Protection Strip

Features and Benefits

Manufactured from a flexible PVC compound which ensures ease of use. Can be used to protect cables from chafing on bulkheads.

Application

PVC Beading strip is used to protect cables routed through sharp-edged cutout sections. It can also be used to provide an attractive finish to panel edges.

Material Data

RoHS

Material	Flexible Polyvinyl Chloride, cadmium free (PVC)
Colour	Black (BK)
Operating Temperature	-65°C to +105°C
Flammability	Self extinguishing

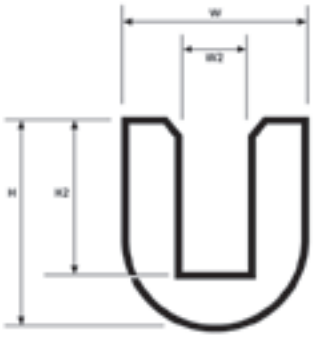
Technical Table

Code	Width (W)	Width (W2)	Width (W3)	Width (W4)	Height (H)	Height (H2)
SM1	5.0	1.0	1.8	4.2	6.3	4.9
RA1	6.4	2.4	–	–	7.1	5.6
PS1	1.2	0.6	–	–	5.0	3.15

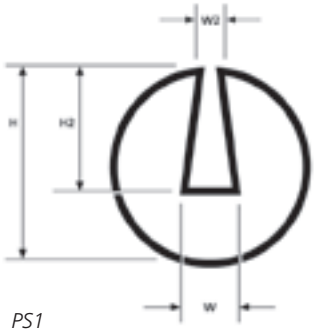
All dimensions in mm. Subject to technical changes.



SM1



RA1



PS1

Edge Protection Grommets

Features and Benefits

HellermannTyton edge protection grommets, made of cadmium-free, flexible PVC or Polyethylene, come in a wide range of shapes and sizes. They are resistant to various minerals and environmental effects.

Application

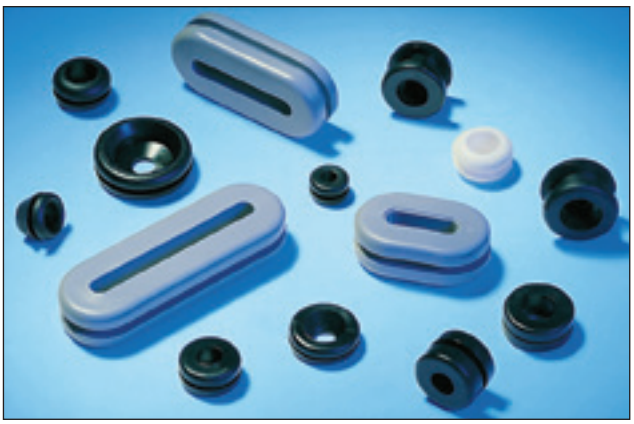
Edge protection grommets are used wherever cable and wires are routed through outlets and apertures. HellermannTyton grommets offer excellent mechanical protection.

Material Data

RoHS

Material	Polyethylene (PE), Cadmium free
Flammability	UL94 HB
Operating Temperature	-10°C to +70°C
Shore Hardness A	Nom. 45

HF (halogenfree)


Edge protection grommets.

Material Data

RoHS

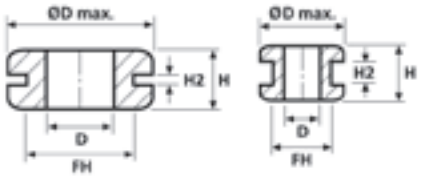
Material	Flexible Polyvinyl Chloride, cadmium free (PVC)
Flammability	UL94 V2
Operating Temperature	-30°C to +60°C
Shore Hardness A	56±5

Technical Table

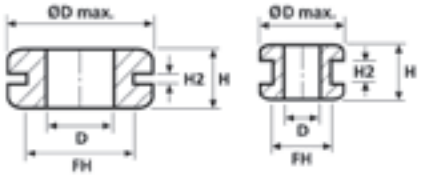
Code	Ø D max.	Fixing Hole Ø (FH)	D	Height (H)	Height (H2)	Material	Colour
*HV3459	9.2	4.8	3.2	5.6	0.8	PVC	Black (BK)
*HV2214F	9.6	6.4	4.8	6.4	0.8	PVC	Black (BK)
*HV2214AF	9.6	6.4	4.8	6.4	3.2	PVC	Black (BK)
*HV3098F	9.6	6.4	4.0	5.6	0.8	PVC	Black (BK)
*HV3195F	9.6	6.4	4.0	6.4	1.6	PVC	Black (BK)
*HV3108F	11.1	8.0	5.6	6.4	1.6	PVC	Black (BK)
*HV2156F	14.3	9.5	7.9	7.9	1.6	PVC	Black (BK)
*HV3109A	14.3	9.5	6.4	7.1	1.6	PVC	Black (BK)
*HV3109BF	14.3	9.5	6.4	7.1	2.4	PVC	Black (BK)
*HV3111F	12.7	9.5	4.8	7.1	1.2	PVC	Black (BK)
*HV3543F	15.9	9.5	4.0	6.4	3.2	PVC	Black (BK)
*HV3109	14.3	11.1	6.4	7.1	1.6	PVC	Black (BK)
*HV2215F	19.0	12.7	7.9	8.8	1.6	PVC	Black (BK)
*HV2215AF	19.0	12.7	7.9	9.5	3.2	PVC	Black (BK)
*HV3110	17.5	12.7	9.6	7.9	1.6	PVC	Black (BK)
*HV3110AF	17.5	12.7	9.6	6.7	1.2	PVC	Black (BK)
*HV3556F	19.0	14.3	11.1	6.4	1.6	PVC	Black (BK)
*HV3556AF	19.0	14.3	11.1	9.5	3.2	PVC	Black (BK)
*HV3592	20.6	15.9	12.7	9.5	6.8	PVC	Black (BK)
*HV4165F	20.6	15.9	12.7	6.0	1.2	PVC	Black (BK)
*HV2412	25.4	19.0	12.0	7.9	1.6	PVC	Black (BK)
*HV3222F	28.6	22.2	15.9	7.5	1.2	PVC	Black (BK)
*HV2166C	38.0	25.4	22.0	11.1	3.2	PVC	Black (BK)
*HV2165	46.1	34.9	30.0	8.7	0.8	PVC	Black (BK)
*HV2512	46.1	32.5	18.3	8.7	0.8	PVC	Black (BK)
*HV4243F	24.4	19.0	Blank	7.9	2.0	PVC	Black (BK)
*HV244F	36.5	25.4	Blank	9.5	2.4	PVC	Black (BK)
HV1101	25.5	19.0	12.0	10.0	1.6	PVC	Black (BK)
HV1201	9.5	6.4	4.0	5.6	1.6	PVC	Black (BK)
HV1201B	9.5	6.4	4.0	6.5	2.5	PVC	Black (BK)
HV1203	17.5	12.0	10.0	6.8	2.0	PVC	Black (BK)
HV1204	17.5	12.0	10.0	8.8	4.0	PVC	Black (BK)
HV1205	17.5	13.5	10.0	8.7	4.0	PVC	Black (BK)
HV1206	17.5	12.0	10.0	10.8	6.0	PVC	Black (BK)
HV1207	14.0	10.0	6.0	6.4	1.5	PVC	Black (BK)
HV1208	14.0	9.5	8.0	8.0	1.5	PVC	Black (BK)
HV1208	14.0	9.5	8.0	8.0	1.5	PVC	White (WH)
HV1209	11.0	9.0	4.0	5.5	1.5	PVC	Black (BK)
HV1210	15.0	9.0	6.0	10.5	2.0	PVC	Black (BK)
HV1212	9.0	6.0	4.0	7.0	1.0	PVC	Black (BK)
HV1215	10.0	8.0	6.0	5.0	1.0	PVC	Black (BK)
HV1216	14.5	8.0	5.0	6.5	1.5	PVC	Black (BK)
HV1218	14.0	10.0	6.0	9.0	4.0	PVC	Black (BK)
HV1301	15.9	11.0	8.0	7.0	1.0	PVC	Black (BK)
HV1301	15.9	11.0	8.0	7.0	1.0	PVC	White (WH)
HV1302	15.9	11.0	8.0	9.0	3.0	PVC	Black (BK)
HV1303	15.9	11.0	8.0	6.4	1.6	PVC	Black (BK)
HV1304	15.9	11.0	8.0	10.8	6.0	PVC	Black (BK)
HV1305	24.0	18.0	14.0	7.0	3.0	PVC	Black (BK)
HV1305	24.0	18.0	14.0	7.0	3.0	PVC	White (WH)
HV1401	15.9	9.5	5.0	4.8	0.8	PVC	Black (BK)
HV1402	23.0	18.5	6.0	7.0	2.0	PVC	Black (BK)
HV1606	31.0	25.0	17.0	11.0	3.0	PVC	Grey (GY)
HV1607	43.0	37.0	29.0	11.0	3.0	PVC	Grey (GY)
HV1608	58.0	52.0	44.0	11.0	3.0	PVC	Grey (GY)
HV1502	11.5	8.0	6.5	8.0	1.5	PVC	Black (BK)
OP1503	9.6	6.7	5.4	5.0	1.0	PE	Natural (NT)

All dimensions in mm. Subject to technical changes.

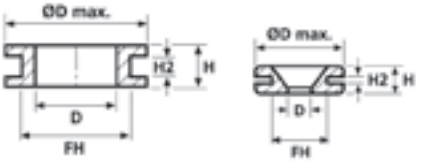
*** Available in South Africa**



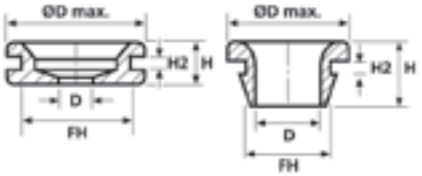
HV2214F to HV3459



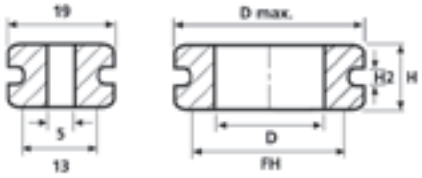
HV1101 *HV1201 to HV1218*



HV1301 to HV1305 *HV1401*



HV1402 *HV1502 and OP1503*



HV1606 to HV1608



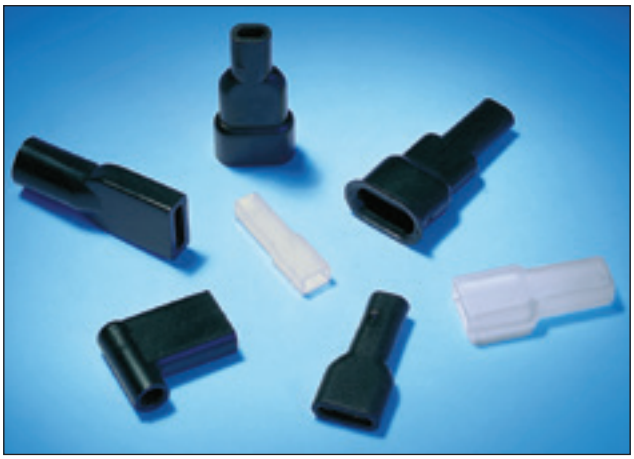
Push-on Caps and Elbow Grommets

Features and Benefits

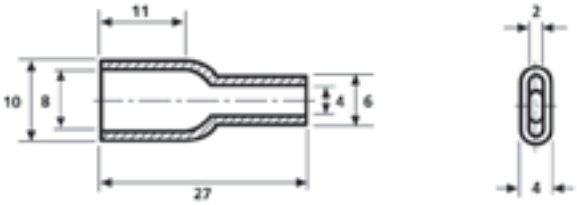
The push-on caps and elbow grommets are flexible and easy to apply. They offer highly effective protection against spraying water.

Application

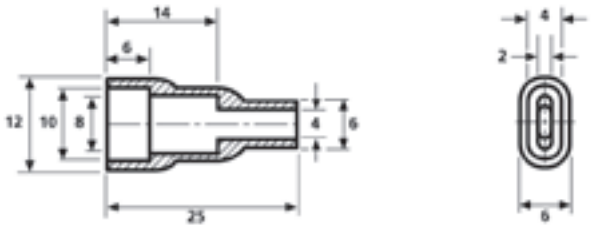
The protective push-on caps and elbow grommets are specially constructed to insulate and protect flat pin bushings. The caps and grommets are used in all areas of automotive electronics and in electrical connection systems.



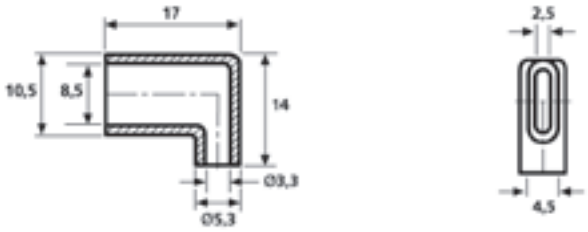
Push-on caps and elbow grommets in various dimensions.



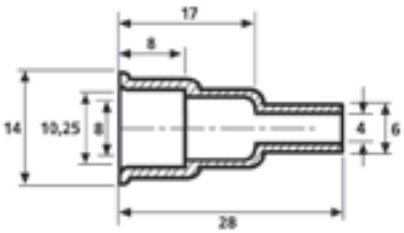
HV4819



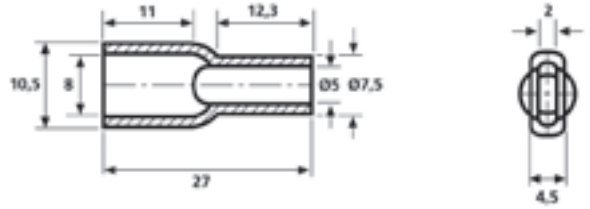
HV4820



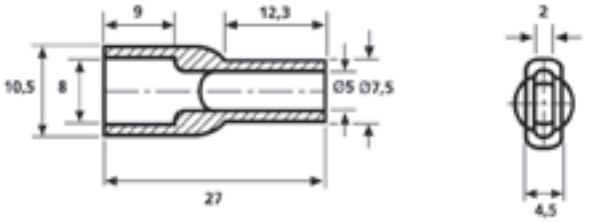
HV4821



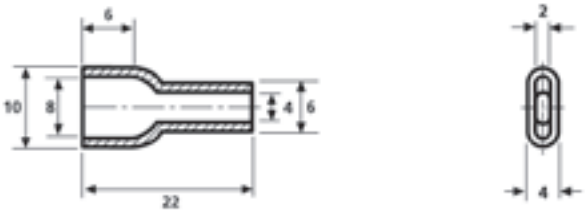
HV4825



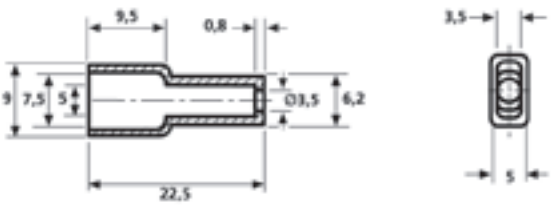
HV4822



HV4823



HV4824

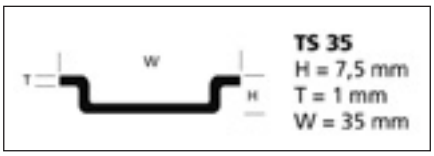


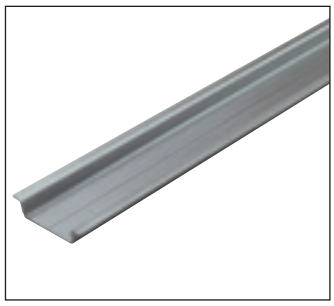
OP4827

Din Rail

TS 35

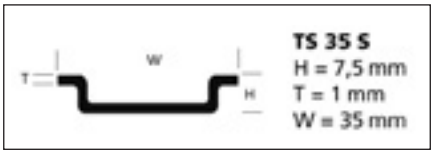
Carrier rail 35 x 7.5mm
0.039 in (1 mm) thick
acc. to EN 50 022
Steel, zinc-plated and yellow chromated 1N 82 A
(length of 2m)

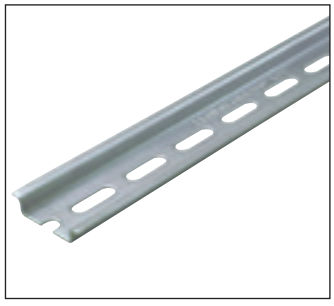




TS 35S (slotted)

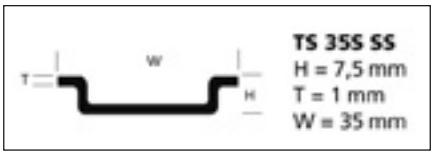
Carrier rail 35 x 7.5mm
perforated length
(length of 2m)

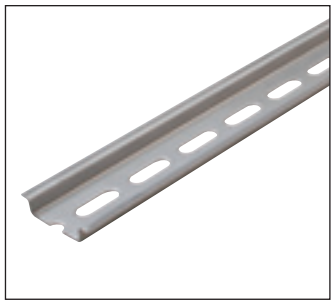




TS 35S SS (slotted) - Stainless Steel

Carrier rail 35 x 7.5mm
perforated length
(length of 2m)
Material - Stainless Steel Type 316





TS 32

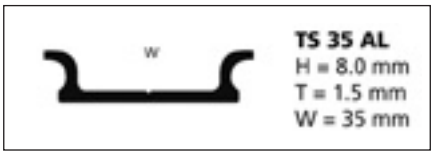
Carrier rail 32mm
0.059 in (1,5mm) thick
acc to DIN 46 277, sheet 1
Steel, zinc-plated and yellow chromated 1N 135 A
(length of 2m)

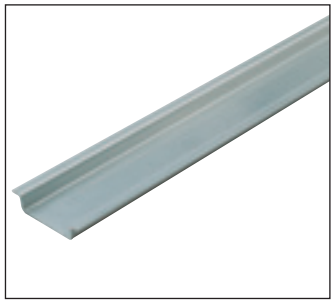




TS 35 AL

Aluminium carrier rail 35 x 8.0mm
1.5mm thick
(length of 2m)

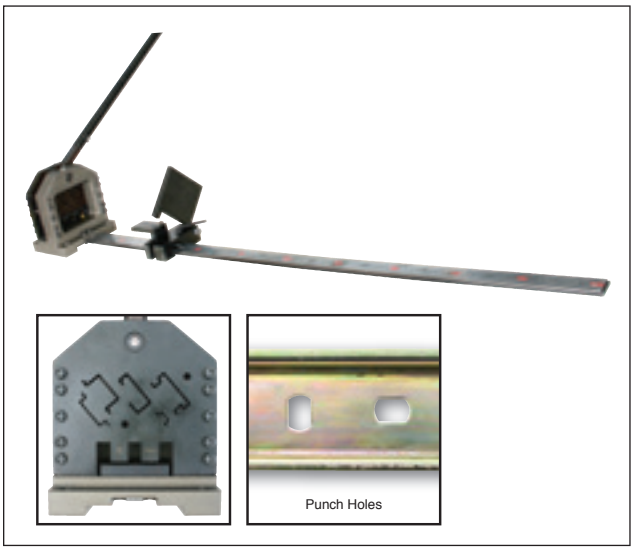




DINCUTTER - Din Rail Cutter

- 1m measurement with guide
- Not for stainless steel Din Rail

HT Code	Material Type	Carrier Rail	Thickness
TS35	Passivated	35 x 7,5mm	1mm
TS32	G-Rail	16,5 x 15mm	1,5mm
TS35C	Passivated	35 x 15mm	1,5mm
TS35AL	Aluminium	35 x 8mm	1,5mm
TS32AL	Aluminium	16,5 x 15mm	1,5mm
TS15	Mini Din	15 x 5,4mm	1mm



Connector Strips

Rated Voltage: 380 VAC
Material: PE
Temperature: 85°C

Technical Table

Code	Rated Current (A)	Wire Size (mm)
CS3MBK	3	4
CS5BK	5	6
CS15BK	15	12
CS30BK	30	16
CS60BK	60	25

All dimensions in mm. Subject to technical changes.



Fospro

Fospro, the 'Professional's choice of de-watering fluid, is now available to you. Fospro is used by the Ministry of Defence and Multinational Companies where performance counts.

If your car will not start due to our damp climate then FOSPRO will `lift' the water away, allowing your electrics to perform. It is a penetrating fluid useful for dismantling rusted nuts and bolts. Ideal for lubricating door hinges, key locks or household items including lawnmowers, bicycles and skateboards etc. It restores electrical conductivity. Ideal for all types of terminals on the car, washing machines, or other electrical appliances.

The aerosol can is also equipped with an extension tube to allow access to those difficult round the corner areas and of course the propellant is a friendly $C0_2$ type. This not only makes it safer but also means that the can is filled with a greater proportion of effective concentrate, unlike most Propane/Butane propellant alternatives.



Fospro.

HelaCon Plus

Transparent Wire Connectors

With HelaCon Plus Transparent Wire Connectors, cable can be connected quickly, safely and without screws. The 100% transparent casing guarantees that all connections can be checked quickly at any time. Six different sizes also mean that an optimal wire connector is available to meet every challenge.

HelaCon Plus combines many advantages:

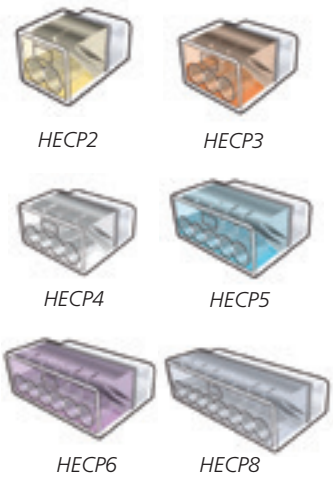
- Saves you time, saves you money, just strip and push
- Conductor sizes 1.5mm² to 2.5mm²
- For stranded, rigid single and multi-core conductors
- Unique double-feeder system for easy installation and secure connection
- Low insertion force for fast and easy connection
- 100% Transparent casing for visual inspection
- Flame-retardant thermoplastic housing
- Colour coded for easy identification
- SABS authorised, RCC No. 0611110
- Rating - 450V, T110, 24A
- 2, 3, 4, 5, 6 & 8 entry
- Separate test entry



HelaCon Plus connectors.



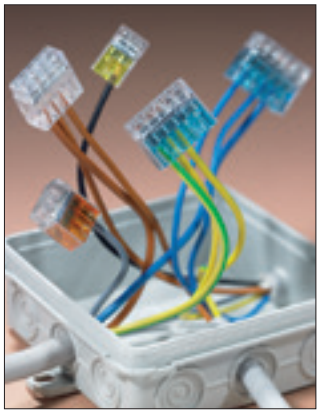
Easy push-in, safe fitting and optical check due to newly developed double spring.



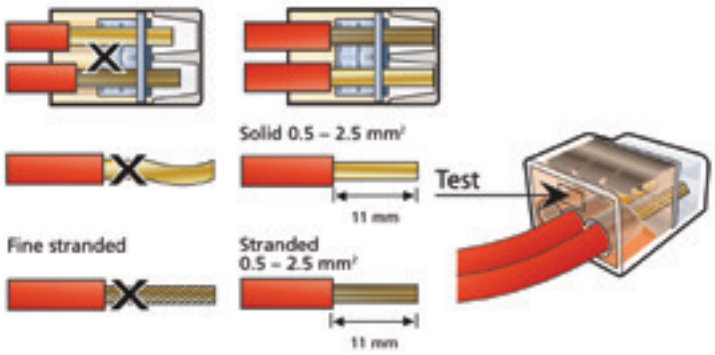
HECP2 *HECP3*

HECP4 *HECP5*

HECP6 *HECP8*



HelaCon Plus used in an on-wall mounted junction box.



Material Data

Material Housing	Polycarbonate (PC)
Material Plated Brass	Brass Tinned
Material Spring Plate	Stainless Steel
Max Current	24A
Max Voltage	450V (VDE), 600V (cULus)
Wire Range (cULus)	AWG 12 to 22 solid/stranded
Wire Range (VDE)	0.5 to 2.5mm² solid/stranded (max 7 cores)
Stripping Length	11mm
Flammability	UL94 V0
Operating Temperature	-30°C to +110°C (VDE), -30°C to +105°C (cULus)
Specification	VDE, NEMCO, SEMCO, FIMCO, DEMCO, KEMA-KEUR, cULus

Technical Table

Code	Colour	Number of Conductors	Width (W)	Height (H)	Depth (D)	Pack Cont.
HECP-2	Transparent (CL), Yellow (YL)	2	11.75	10.45	19	100
HECP-3	Transparent (CL), Orange (OG)	3	15.90	10.45	19	100
HECP-4	Transparent (CL)	4	20.05	10.45	19	75
HECP-5	Transparent (CL), Blue (BL)	5	24.20	10.45	19	50
HECP-6	Transparent (CL), Violet (VT)	6	28.35	10.45	19	50
HECP-8	Transparent (CL), Grey (GY)	8	36.65	10.45	19	50

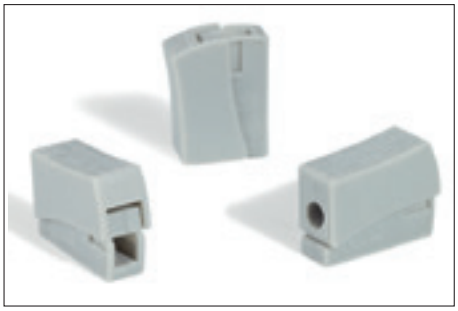
All dimensions in mm. Subject to technical changes.

Please note! Not all products listed on this page may have this approval.
For product specific approvals please refer to the Appendix.

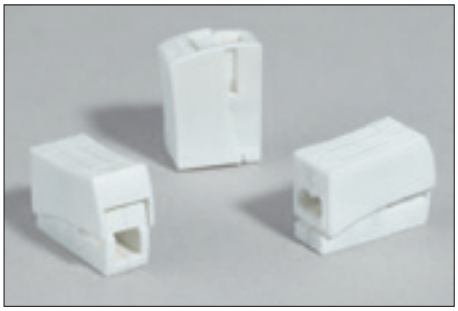
HelaCon Lux

Features and Benefits

HelaCon Lux is best suitable to connect solid and flexible wire. It combines push-in connector technology that is well known from HelaCon Easy with a lock/unlock spring mechanism to connect fine-stranded conductors.
They may be used within a typical housing range of 450 V / 24 A. The two available variants provides either one or two inputs for solid conductors on the installation side, offering high flexibility in application. Instead of using screwed terminal blocks the tool-free application of the lighting connectors results in an easy, time-saving and safe connection of conductors. The user benefits from this especially in overhead work and when wires are difficult to access.



HelaCon Lux 1/1.



HelaCon Lux 2/1.



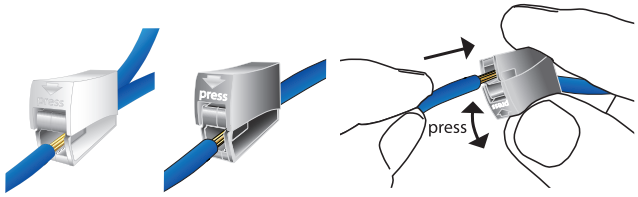
Quick installation and release of lighting devices with HelaCon Lux.

Application

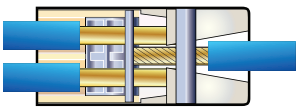
A typical application is lighting installation, where the solid conductor from concealed cabling has to be connected to a flexible conductor for lightings. The 2/1 variant allows the looping through of the supply lines for additional devices. The conductor on the output/lighting side can be easily inserted by pressing the locking mechanism and can be released in the same way at any time. The lighting side can carry any kind of conductor and makes HelaCon Lux connectors also useful for connecting devices that carry flexible connecting cables like control devices e.g. for blinds, fans and other drives.

Application Method

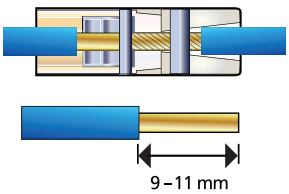
- Do not work under load
- Strip off the conductors 9 - 11mm
- Push in the solid conductor into the round input on the installation side
- Unlock the lighting side by pressing the connector's rectangular input
- Insert the lighting conductor and release the connector
- To remove, simply press the connector again and withdraw the conductor
- The installation side can easily be removed by twisting and pulling the conductor
- The test entry can be used to check the voltage with a meter

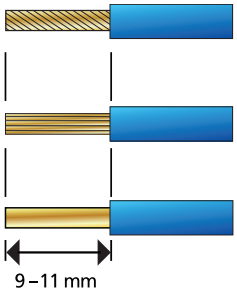


Tool-free connection of lightings.



Installation side: 0.75 – 2.5 mm² solid





Lighting side: 0.5 – 2.5 mm² solid, stranded, fine stranded

Material Data

Material Housing	Polycarbonate 6.6 (PA66)
Max Current	24A
Max Voltage	450V
Wire Range (VDE)	0.5 (0.75) to 2.5mm²
Stripping Length	11mm
Flammability	UL94 V2
Operating Temperature	-5°C to +100°C
Specification	VDE, FIMCO, ENEC, KEMA-KEUR, CEBEC, cULus

RoHS

Technical Table

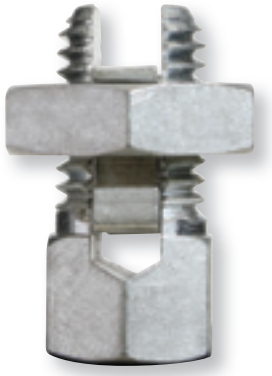
Code	Colour	Number of Conductors	Width (W)	Height (H)	Depth (D)	Pack Cont.
HECQ1GY	Grey (GY)	1	8.10	15.80	20.80	100
HECQ2WT	White (WH)	2	9.50	15.80	20.80	100

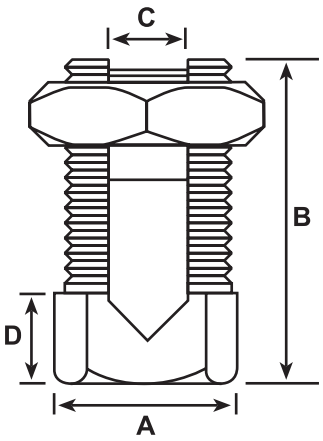
All dimensions in mm. Subject to technical changes.

Please note! Not all products listed on this page may have this approval.
For product specific approvals please refer to the Appendix.

Line Taps

- Made with high tensile brass and electro tinned
- Threads are formed by a rolling process giving the nut extra clamping force.
- Pressure pads are from extruded bar.





Technical Table

Code	Conductor mm²	Number of Conductors			
		A	B	C	D
HTLT10	10	12.6	27.4	5.0	9.5
HTLT16	16	14.5	27.4	5.5	10.0
HTLT25	25	14.5	29.0	7.0	10.0
HTLT35	35	20.5	35.0	8.0	13.0
HTLT50	50	22.0	42.5	9.3	17.0
HTLT70	70	26.5	47.3	11.0	17.0
HTLT95	95	29.0	53.0	14.0	17.5
HTLT120	120	34.2	59.2	16.2	18.0
HTLT150	150	34.2	59.2	16.0	17.5
HTLT185	185	32.0	59.2	17.8	17.5

All dimensions in mm. Subject to technical changes.

Wall Boxes

HT4X2WB

- Hot dipped galvanised wall box with 20mm gland entry
- 4 mm machine screw thread
- Standard carton x 100



HT4X2WB

HT4X4WB

- Hot dipped galvanised wall box with 20mm gland entry
- 4 mm machine screw thread
- Standard carton x 100



HT4X4WB

HT4X2EBM

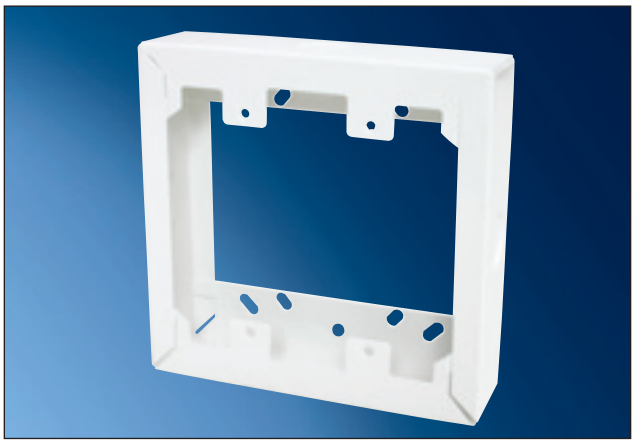
- White powder coated extension wall box with 20mm gland entry
- 4 mm machine screw thread
- Standard carton x 100



HT4X2EBM

HT4X4EBM

- White powder coated extension wall box with 20mm gland entry
- 4 mm machine screw thread
- Standard carton x 100



HT4X4EBM

Wall Boxes

HT3X3WB

- Hot dipped galvanised wall box with 20mm and 25mm gland entry
- Earth stud
- Heavy duty
- Standard carton x 100



HT3X3WB

HT3X6WB

- Hot dipped galvanised wall box with 20mm and 25mm gland entry
- Earth stud
- Heavy duty
- Standard carton x 100



HT3X6WB

HT3X3WBE

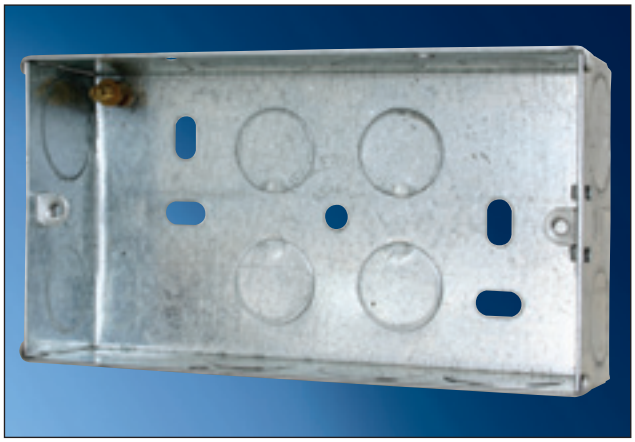
- Hot dipped galvanised wall box with 20mm and 25mm gland entry
- Earth stud
- Standard
- Standard carton x 100



HT3X3WBE

HT3X6WBE

- Hot dipped galvanised wall box with 20mm and 25mm gland entry
- Earth stud
- Standard
- Standard carton x 100



HT3X6WBE

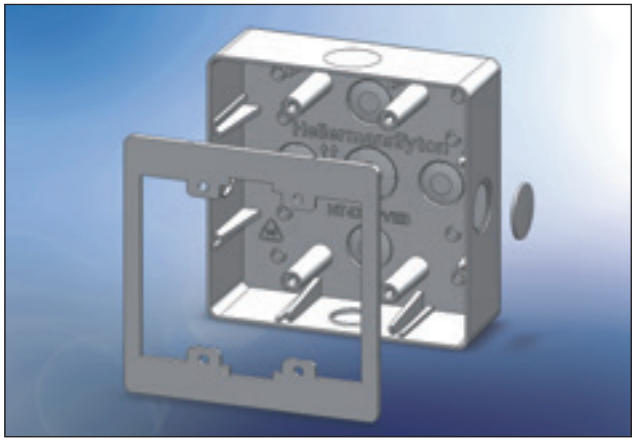
Polypropylene Wall Box Range

Features and Benefits

- Designed and manufactured in South Africa to comply with local conditions and specifications.
- The wall boxes have an unbreakable design with easy to remove knockouts which will not destroy the box.
- Our extension boxes feature unique side knock-out plugs that are aesthetically pleasing and easy to remove, yet can't be removed accidently.
- Five easily removable rear knockouts 1 x 25mm and 4 x 20mm.
- Drill guides for quick mounting.



Polypropylene Wall Box Range.



Innovative design.

Material Data

Material	Polypropylene
Colour	Ice White
Operating Temperature	-20°C to +85°C
Flammability	UL94 V2
Specifications	IEC60335-1:2010
	IEC60695-2-11 (Glow wire test 450°C)

Technical Table

Code	Description	Gland Entry	STD Carton
HT4x2PVWB	Internal Wall Box 4x2	20mm	100 PCS
HT4X4PVWB	Internal Wall Box 4x4	20mm	100 PCS
HT4X2PVEB	Extension Wall Box 4x2	20mm + 25mm	100 PCS
HT4X4PVEB	Extension Wall Box 4x4	20mm + 25mm	100 PCS


SABS
APPROVED

Crimping Terminals



	Page
Pre-insulated Terminal Chart	5/1
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Insulated Butt Connectors	5/5
Insulated Blade Terminals	5/5
Insulated Hook Blade Terminals	5/5
Insulated Male Disconnects	5/5
Insulated Female Disconnects	5/6
Fully Insulated Female Disconnects	5/6
Insulated Piggy Back Disconnects	5/6
Insulated Male Bullet Disconnects	5/6
Insulated Female Bullet Disconnects	5/6
Quick Splice/T-Splice Connectors	5/7
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HT Heavy Duty Lugs	5/11
HT Heavy Duty Ferrules	5/12
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HTB Standard Ferrules	5/14
XLPE Lugs and Ferrules	5/15
T-Ferrules	5/16
HT Pin Terminals	5/16

RoHS — The restriction of the use of certain hazardous substances in electrical and electronic equipment

HF (halogenfree) — Halogen Free

LFH (Limited Fire Hazard) — Limited Fire Hazard

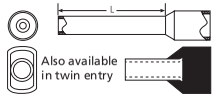
HellermannTyton
PRE-INSULATED TERMINALS

Wire Range mm²	STUD (mm)	RING R(E)	SPADE S(E)	PIN P(E)	BUTT UT(E)	BULLET MALE ULM(E)	BULLET FEMALE ULF(E)	FLAT BLADE FB(E)	HOOK BLADE HB(E)	DISCONNECT MALE DM(E)	DISCONNECT FEMALE DFE)	PIGGY-BACK PB(E)	FULLY INSULATED DISCONNECT MALE (F-DM)	FULLY INSULATED DISCONNECT FEMALE (F-DF)	T-SPLICE (TS)	QUICK SPLICE (QS)	CLOSED END CONNCECTORS (CE)	CRIMPING TOOLS
.34 - 1,57 (Size 1)	10	1R10		1P10 (10mm)	1UT	1ULM4 (4mm)	1ULF4 (4mm)	1FB10 (10 x 2,3mm)	1HB (4,6mm)	1DM (6,4mm)	1DF (6,4mm)	1PB (6,4mm)		TF1DF (6,4mm)	1TSRD	1QS	CE1	YYT1
	8	1R8																
	6	1R6	1S6A‡					1FB11 (11 x 3,0mm)	1HB3 (3mm)	1DM4 (4,8mm)	1DF4 (4,8mm)			TF1DF4 (4,8mm)				KST2000A KST2000B (Twingrip)
	5	1R5	1S5A‡															
	4	1R4	1S4A‡					1FB14 (14 x 3,0mm)		1DM2 (2,8mm)	1DF2 (2,8mm)			TF1DF2 (2,8mm)				
	3,5		1S35															
	3	1R3	1S3					1FB18 (18 x 2,3mm)					F1DMY (6,4mm Nylon)	F1DFY (6,4mm Nylon)				
1,17 - 3,24 (Size 2)	10	2R10		2P10 (10mm) 2P12 (12mm)	2UT	2ULM4 (4mm) 2ULM5 (5mm)	2ULF4 (4mm) 2ULF5 (5mm)	2FB9 (9 x 2,8mm) 2FB13 (13 x 2,4mm)	2HB (4,6mm)	2DM (6,4mm)	2DF (6,4mm)	2PB (6,4mm)		TF2DF (6,4mm)	2TSBL	2QS	CE2	YYT7
	8	2R8																
	6	2R6	2S6A‡											TF2DF4 (4,8mm)				YYT15
	5	2R5	2S5A‡															
	4	2R4(A)‡	2S4A‡					2FB18 (18 x 2,2mm)	2HB3 (3mm)	2DM4 (4,8mm)	2DF4 (4,8mm)		F2DMY (6,4mm Nylon)	F2DFY (6,4mm Nylon)				
	3,5	2R35	2S35								2DF9 (9,4mm)							
2,5 - 6,00 (Size 3)	12	3R12		3P13 (13mm)	3UT	3ULM5 (5mm)	3ULF5 (5mm)	3FB10 (10 x 2,8mm)	3HB (4,6mm)	3DM (6,4mm)	3DF (6,4mm)	3PB (6,4mm)		TF2DF (6,4mm)	1TSYL	3QS	CE5	HS2004
	10	3R10											F3DMY (6,4mm Nylon)	F3DFY (6,4mm Nylon)				
	8	3R8																
	6	3R6	3S6A‡					3FB14 (14 x 4,5mm)	3HB3 (3mm)		3DF9 (9,4mm)							YYTB6
	5	3R5	3S5															
	4	3R4	3S4A‡															
	3,5	3R35																

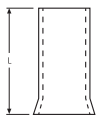
NOTE:
1) For inner copper tube (Twingrip) use prefix "T"
2) ‡(A) Option Narrower
3) Suffix "E" after type denotes "Easy Entry"

BOOTLACE FERRULES

Insulated Code	L (mm)	Wire Size (mm²)
E0208BL	8	,20
E0308TQ	8	,30
E0510WT	8	,50
E0710BL	10	,75
E1010RD	10	1,00
E1510BK	10	1,50
E2512GY	12	2,50
E4012OR	12	4,00
E6012GR	12	6,00
E10012BN	12	10,00
E16018IV	12	16,00
E25022BK	22	25,00
E35025RD	25	35,00



Un-Insulated Code	L (mm)	Wire Size (mm²)
EN0506	8	,50
EN7506	10	,75
EN1010	10	1,00
EN1510	10	1,50
EN2502	12	2,50
EN4012	12	4,00
EN6012	12	6,00
EN10012	12	10,00
EN16018	12	16,00



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Cape Town (021) 594-7100
Durban (031) 569-9900
Port Elizabeth (041) 408-2400

HellermannTyton

Pre-Packs

Wall mounted stand comprising of 10 packs of 41 most popular types of terminals, which includes an Assortment Pack (PRPK28) and a Tool Kit Crimper + Assortment Pack (PRPK 29) of terminals. Ideal for electricians and handymen.



Wall mounted peg board available on request.

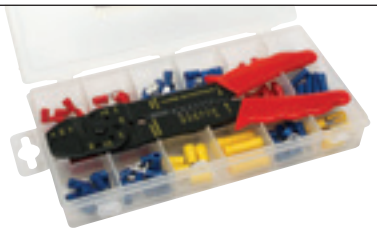
Technical Table

PRPK - 28		PRPK - 29	
Assortment Pack		Toolkit	
Terminals	Quantity	Terminals	Quantity
2PB	4	1S35	5
2UT	4	1DF	5
3R5	4	2DF	5
1S35	4	1UT	5
1R4	4	2R5	5
1DF	4	LY2001	1
1ULM	4		
1ULF	4		
1UT	4		
2R4	4		
2R5	4		
2DF	4		

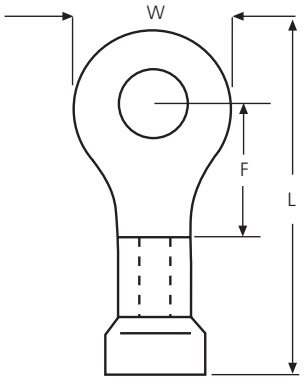
Technical Table

Pack No.	Code	Description	Wire Range (mm)	Qty per pack	Pack No.	Stock No.	Description	Wire Range (mm)	Qty per pack
1	**PRPK 1**	1R6	0.34 – 1.57	10	22	PRPK 22	1PB	0.34 – 1.57	10
2	**PRPK 2**	1R5		10	23	PRPK 23	2PB	1.17 – 3.24	6
3	**PRPK 3**	1R4		10	24	PRPK 24	1ULM4	0.34 – 1.57	8
4	**PRPK 4**	2R6	1.17 – 3.24	8	25	PRPK 25	2ULM4	1.17 – 3.24	8
5	**PRPK 5**	2R5		10	26	PRPK 26	1ULF4	0.34 – 1.57	8
6	**PRPK 6**	2R4		10	27	PRPK 27	2ULF4	1.17 – 3.24	8
9	**PRPK 9**	3R5		6	30	PRPK 30	1S5A	0.34 – 1.57	10
10	**PRPK 10**	1S35	0.34 – 1.57	10	31	PRPK 31	2S4A	1.17 – 3.24	10
11	**PRPK 11**	1S4A		10	32	PRPK 32	1DF2	0.34 – 1.57	10
12	**PRPK 12**	2S35	1.17 – 3.24	10	33	PRPK 33	1DF4		10
13	**PRPK 13**	2S5A		10	34	PRPK 34	2DF4	1.17 – 3.24	10
14	**PRPK 14**	1P10	0.34 – 1.57	10	35	PRPK 35	3DF	2.5 – 6.0	8
15	**PRPK 15**	2P12	1.17 – 3.24	10	36	PRPK 36	3DM		8
16	**PRPK 16**	1UT	0.34 – 1.57	10	37	PRPK 37	3DF9		5
17	**PRPK 17**	2UT	1.17 – 3.24	8	38	PRPK 38	F1DFY	0.34 – 1.57	5
18	**PRPK 18**	1DM	0.34 – 1.57	10	39	PRPK 39	F2DFY	1.17 – 3.24	5
19	**PRPK 19**	2DM	1.17 – 3.24	10	40	PRPK 40	3UT	2.5 – 6.0	6
20	**PRPK 20**	1DF	0.34 – 1.57	10	41	PRPK 41	3R10		5
21	**PRPK 21**	2DF	1.17 – 3.24	10					

Technical Table

Code	Description	Quantity of Each Component	Content	
K150T	Pre-insulated Terminal Kit complete with Crimping Tool	10/5	1R4, 2R4, 2R5, 1S35, 2S35, 1UT, 2UT, 3R5, 3S5, 3UT, 1DF, 2DF, 1DM, 2DM YL2001 (Crimping Tool)	
K175	Pre-insulated Terminal Kit	15/10/5	2R35A, 1UT, 2UT, 1DF, 2DF, 1DM, 2DM, 1R4, 1R5, 2R4, 2R5, 1S35, 3UT, 3R5	
K300	Pre-insulated Terminal Kit	25/20/15/10/5	1R4, 1R5, 1S35, 2R4, 1DF, 2DF, 1DM, 2DM, 2R35A, 2R5, 1UT, 2UT, 3R5, 3R6, 3UT	

Insulated Ring Terminals

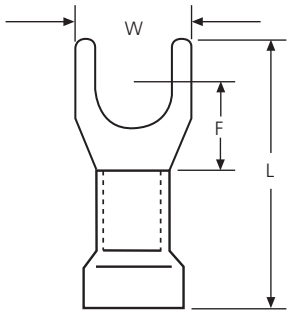


Technical Table

Code	Wire Range (mm²)	Colour	Stud Size (mm)	Dimensions (mm)		
				W	L	F
1R3	0,25 - 1,65		3,2	5,5	17,5	5,0
1R4			4,3	8,0	20,5	7,0
1R5			5,3	8,0	20,5	7,0
1R6			6,4	11,6	26,8	11,0
1R8			8,4	11,6	26,8	11,0
1R10			10,5	13,6	30,5	13,9
2R35	1,04 - 2,63		3,7	6,6	17,8	6,6
2R4			4,3	8,5	21,8	8,5
2R5			5,3	9,5	21,8	9,5
2R6			6,4	12,0	26,8	11,0
2R8			8,4	12,0	26,8	11,0
2R10			10,5	13,6	30,5	13,9
3R35	2,63 - 6,64		3,7	7,2	22,7	6,1
3R4			4,3	9,5	26,6	9,1
3R5			5,3	9,5	26,6	9,1
3R6			6,4	12,0	29,5	10,5
3R8			8,4	15,0	34,0	13,5
3R10			10,5	15,0	34,0	13,5
3R12			12,0	19,2	38,6	16,0

For Inner Copper Tube (TwinGrip) use Prefix "T"

Insulated Spade Terminals

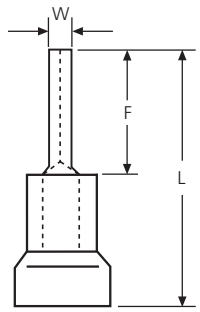


Technical Table

Code	Wire Range (mm²)	Colour	Stud Size (mm)	Dimensions (mm)		
				W	L	F
1S35	0,25 - 1,65		3,7	6,4	21,0	6,5
1S3			3,2	5,7	21,0	6,5
1S4A			4,3	6,4	21,0	6,5
1S5A			5,3	8,1	21,0	6,5
1S6A			6,4	9,5	21,0	6,5
2S35	1,04 - 2,63		3,7	6,0	21,0	6,5
2S4A			4,3	6,4	21,0	6,5
2S5A			5,3	7,9	21,0	6,5
2S6A			6,4	9,3	21,0	6,5
3S4A	2,63 - 6,64		4,3	8,3	25,5	7,0
3S5			5,3	9,0	25,5	7,0
3S6A			6,4	9,0	25,5	7,0

For Inner Copper Tube (TwinGrip) use Prefix "T"

Insulated Pin Terminals



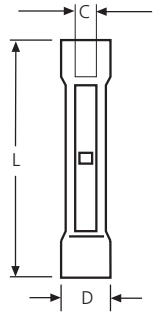
Technical Table

Code	Wire Range (mm²)	Colour	Dimensions (mm)		
			W	L	F
1P10	0,25 - 1,65		1,9	19,8	10,0
2P10	1,04 - 2,63		1,9	19,8	10,0
2P12			2,8	27,0	13,0
3P13	2,63 - 6,64				

For Inner Copper Tube (TwinGrip) use Prefix "T"

● 0.5 - 1,5mm² - 19Amp 600V ● 1.5 - 2,5mm² - 27Amp 600V ● 4 - 6mm² - 48Amp 600V

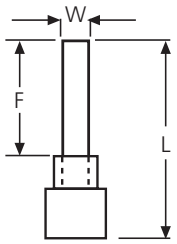
Insulated Butt Connectors



Technical Table

Code	Wire Range (mm²)	Colour	Dimensions (mm)		
			D	C	L
1UT	0,25 - 1,65		4,0	1,7	24,6
2UT	1,04 - 2,63		4,5	2,3	24,6
3UT	2,63 - 6,64		6,3	3,4	26,5

Insulated Blade Terminals

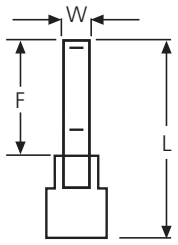


Technical Table

Code	Wire Range (mm²)	Colour	Dimensions (mm)		
			W	L	F
1FB10	0,25 - 1,65		2,3	19,8	10,0
1FB11			3,0	20,8	11,0
1FB14			3,0	23,8	14,0
1FB18			2,2	27,8	18,0
2FB9	1,04 - 2,63		2,8	18,8	9,0
2FB13			2,4	22,8	13,0
2FB18			2,2	27,8	18,0
3FB10	2,63 - 6,64		2,8	23,0	10,0
3FB14			4,5	27,0	14,0

For Inner Copper Tube (TwinGrip) use Prefix "T"

Insulated Hook Blade Terminals

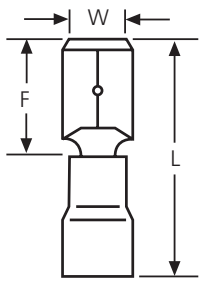


Technical Table

Code	Wire Range (mm²)	Colour	Dimensions (mm)		
			W	L	F
1HB3	0,25 - 1,65		3,0	27,2	16,8
1HB			4,6	27,2	16,8
2HB3	1,04 - 2,63		3,0	27,2	16,8
2HB			4,6	27,2	16,8
3HB3	2,63 - 6,64		3,0	30,2	17,2
3HB			4,6	30,2	17,2

For Inner Copper Tube (TwinGrip) use Prefix "T"

Insulated Male Disconnects



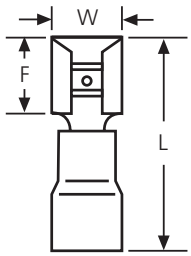
Technical Table

Code	Wire Range (mm²)	Colour	Dimensions (mm)		
			W	L	F
1DM4	0,25 - 1,65		4,8	19,0	6,5
1DM			6,35	21,0	7,7
2DM4	1,04 - 2,63		4,8	10,0	6,5
2DM			6,35	21,0	7,7
3DM	2,63 - 6,64		6,35	24,0	7,7

For Inner Copper Tube (TwinGrip) use Prefix "T"

● 0.5 - 1,5mm² - 19Amp 600V ● 1.5 - 2,5mm² - 27Amp 600V ● 4 - 6mm² - 48Amp 600V

Insulated Female Disconnects

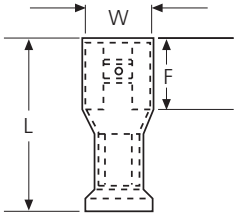


Technical Table

Code	Wire Range (mm²)	Colour	Dimensions (mm)		
			W	L	F
1DF2	0,25 - 1,65		3,2	18,6	6,5
1DF4			5,0	19,0	6,4
1DF			6,6	20,5	7,3
2DF4	1,04 - 2,63		5,0	19,0	6,4
2DF			6,6	20,5	7,3
2DF9			10,0	25,5	12,0
3DF	2,63 - 6,64		6,6	23,5	7,3
3DF9			10,0	28,5	12,0

For Inner Copper Tube (TwinGrip) use Prefix "T"

Fully Insulated Female Disconnects

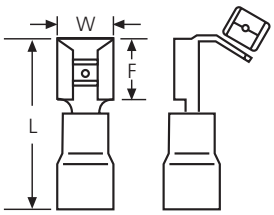


Technical Table

Code	Wire Range (mm²)	Colour	Dimensions (mm)		
			W	L	F
F1DF2	0,25 - 1,65		3,8	19,0	6,4
F1DF4			5,0	19,3	6,4
F1DF			6,6	22,0	7,3
F2DF4	1,04 - 2,63		5,0	19,3	6,4
F2DF			6,6	22,0	7,3
F3DF	2,63 - 6,64		6,6	24,0	7,3
F3DF9			10,0	28,5	12,0

For Inner Copper Tube (TwinGrip) use Prefix "T"

Insulated Piggy Back Disconnects

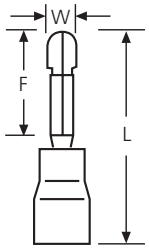


Technical Table

Code	Wire Range (mm²)	Colour	Dimensions (mm)		
			W	L	F
1PB	0,25 - 1,65		6,6	22,0	8,0
2PB	1,04 - 2,63		6,6	22,0	8,0

For Inner Copper Tube (TwinGrip) use Prefix "T"

Insulated Male Bullet Disconnects

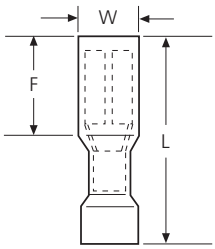


Technical Table

Code	Wire Range (mm²)	Colour	Dimensions (mm)		
			W	L	F
1ULM4	0,25 - 1,65		4,0	21,5	8,5
2ULM4	1,04 - 2,63		4,0	21,5	8,5
3ULM4	2,63 - 6,64		4,0	24,0	8,5
3ULM5			5,0	24,0	8,5

For Inner Copper Tube (TwinGrip) use Prefix "T"

Insulated Female Bullet Disconnects



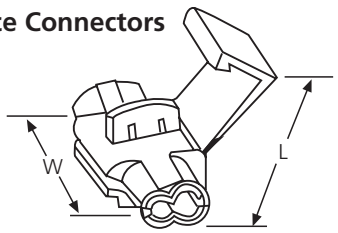
Technical Table

Code	Wire Range (mm²)	Colour	Dimensions (mm)		
			W	L	F
1ULF4	0,25 - 1,65		3,9	21,5	7,3
2ULF4	1,04 - 2,63		3,9	25,5	7,3
2ULF5			5,9	25,5	7,0
3ULF5	2,63 - 6,64		4,9	24,5	7,0

For Inner Copper Tube (TwinGrip) use Prefix "T"

● 0.5 - 1,5mm² - 19Amp 600V ● 1.5 - 2,5mm² - 27Amp 600V ● 4 - 6mm² - 48Amp 600V

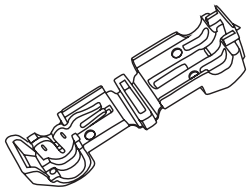
Quick Splice Connectors



Technical Table

Code	Wire Range (mm²)	Colour	Dimensions (mm)	
			W	L
1QS	0,25		20,0	27,0
2QS	2,0		20,0	27,0
3QS	5,5		20,5	34,5

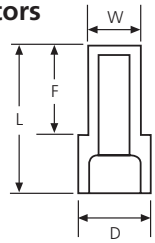
T-Splice Connectors



Technical Table

Code	Wire Range (mm²)	Colour	Dimensions (mm)	
			W	L
1TSRD	0,25		9,4	35,0
2TSBL	2,0		9,4	35,0
3TSYL	5,5		9,4	35,0

Closed End Connectors

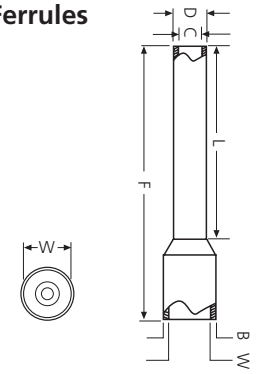


Technical Table

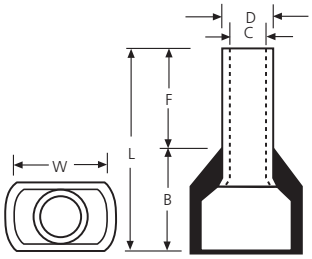
Code	(mm²)	Dimensions (mm)			
		W	L	F	D
CE1	1,25	5,3	21,0	8,0	9,8
CE2	2	6,0	21,0	9,0	10,0

Boot Lace Ferrules

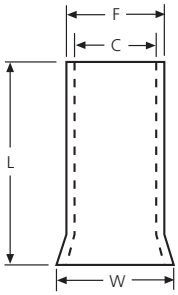
E - Insulated



TE - Twin Entry Insulated



EN - Uninsulated



Technical Table

Code	Dimensions (mm)						Wire Range Insulation	
	L	F	W	B	C	D	(mm²)	Colour
E0208	8.0	12.4	1.9	4.4	0.8	1.1	0.25	
E0308	8.0	12.4	1.9	4.4	0.8	1.1	0.34	
E0510	10.0	16.0	2.6	6.0	1.0	1.3	0.5	White
E0710	10.0	16.3	3.0	6.3	1.2	1.5	0.75	
E01010	10.0	16.3	3.0	6.3	1.4	1.7	1.0	
E01510	10.0	16.4	3.5	6.3	2.0	1.7	1.5	
E02512	12.0	19.4	4.0	7.4	2.3	2.6	2.5	
E4012	12.0	19.4	4.5	7.4	2.8	3.2	4.0	
E6012	12.0	20.5	6.0	8.5	3.5	3.9	6.0	
E10012	12.0	20.8	7.5	8.8	4.5	4.9	10.0	
E16018	18.0	28.0	8.7	10.0	5.8	6.2	16.0	
TE0508	14.5	8.0	5.0	3.6	1.5	1.8	0.5	White
TE0708	14.7	8.0	5.5	3.5	1.8	2.1	0.75	
TE1010	17.1	10.0	5.5	4.0	2.0	2.3	1.0	
TE1512	19.5	12.0	6.4	4.2	2.3	2.6	1.5	
TE2513	21.5	13.0	8.0	5.0	2.9	3.3	2.5	
TE4012	23.1	12.0	8.8	5.7	3.8	4.2	4.0	
TE6014	26.1	14.0	9.5	6.8	4.9	5.3	6.0	
TE10014	26.6	14.0	12.1	8.0	6.5	6.9	10.0	
TE16014	31.3	14.0	19.0	10.5	8.3	8.7	16.0	

Technical Table

Code	Dimensions (mm)				Wire Range (mm²)
	L	F	W	C	
EN0506	6.0	1.3	1.7	1.0	0.5
EN0710	10.0	1.5	1.9	1.2	0.75
EN1010	10.0	1.7	2.2	1.4	1.0
EN1510	10.0	2.0	2.5	1.7	1.5
EN2512	12.0	2.6	3.3	2.3	2.5
EN4012	12.0	3.2	3.9	2.8	4.0
EN6012	12.0	3.9	4.7	3.5	6.0
EN10012	12.0	4.9	5.8	4.5	10.0
EN16018	18.0	6.2	7.2	5.8	16.0

BRASS TERMINALS

RING	DISCONNECT FEMALE	DISCONNECT FEMALE WITH CLIP	SPADE	MALE	BULLET FEMALE	BULLET MALE	ANGLE GRIPTITE
							
UR10 (10mm) UR8 (8mm) UR6 (6mm) UR5 (5mm) UR4 (4mm) UR3 (3mm)	UDF (5mm) UDF2 (2,8mm) UDF4 (4mm)	UDFC	US4 (4mm)	UDM (6.4 x 7mm) LOMS1250 (6.4 x 10mm)	UULF4 (4mm)	UULM4 (4mm)	LFO6125A

TOOLS



*YYT8

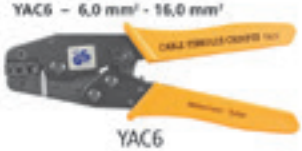


LY2001



YAC3

YAC5 – 0,5 mm² - 6,0 mm²
YAC6 – 6,0 mm² - 16,0 mm²



YAC6



KST2000A
KST2000B (Twingrip)



YAC9



YAC8



YAC13



YYT7



YYT1



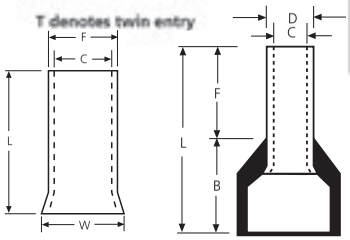
YYT11 (Brass)

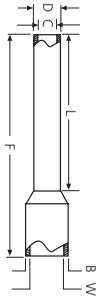
* DENOTES FOR UNINSULATED TERMINALS

BOOTLACE FERRULES

		INSULATED			UN-INSULATED		
		Code	L(mm)	Wire Size (mm²)	Code	L(mm)	Wire Size (mm²)
●		E0208VT	8	,20			
●		E0308PK	8	,30			
○	(T)	E0510WT	8	,50	EN0506	8	,50
●	(T)	E0710BL	10	,75	EN7506	10	,75
●	(T)	E1010RD	10	1,00	EN1010	10	1,00
●	(T)	E1510BK	10	1,50	EN1510	10	1,50
●	(T)	E2512GY	12	2,50	EN2502	12	2,50
●	(T)	E4012OR	12	4,00	EN4012	12	4,00
●	(T)	E6012GR	12	6,00	EN6012	12	6,00
●	(T)	E10012BN	12	10,00	EN10012	12	10,00
○	(T)	E16018IV	12	16,00	EN16018	12	16,00
●		E25022BK	22	25,00			
●		E35025RD	25				

T denotes twin entry

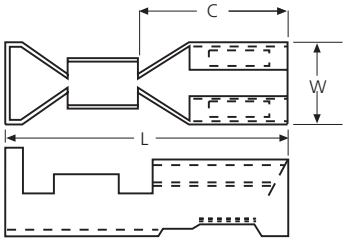






Griptite Terminals and Covers

Uninsulated Receptacles

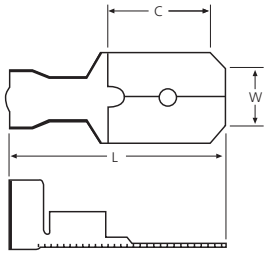




Technical Table

Code	Stranded Wire Item No.	Dimensions (mm)		
		L	C	W
LTO61250N	0,75 - 2,0	19,0	8,0	7,6
LTO81250N	2,0 - 3,5	19,6	8,0	7,6

Uninsulated Blade

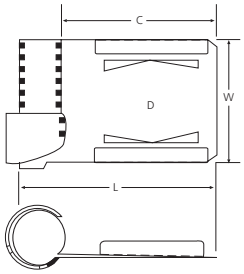




Technical Table

Code	Stranded Wire Item No.	Dimensions (mm)		
		L	C	W
LOM1250	0,5 - 2,0	20,6	9,8	6,35

Uninsulated Right-Angled Blade





Technical Table

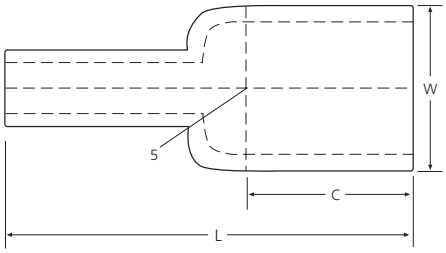
Code	Stranded Wire Item No.	Dimensions (mm)		
		L	C	W
SF061250A	0,75 - 2,0	16,1	7,8	8,0

Griptite Insulating Covers (PVC) 6,3 Series



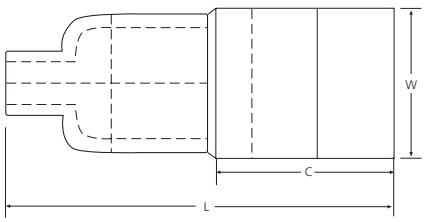


HV4819

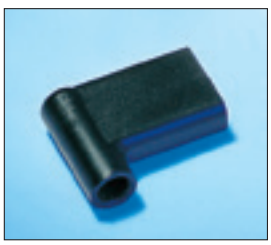


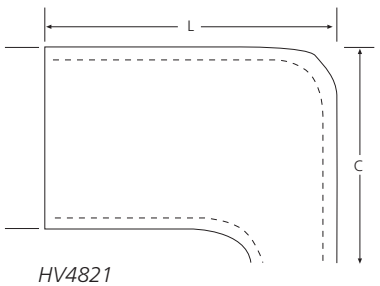
HV4819





HV4820

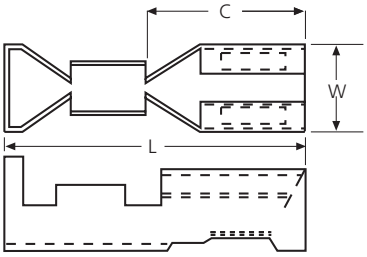




HV4821

Brass – Open Barrel Terminals

Uninsulated Disconnect - Female



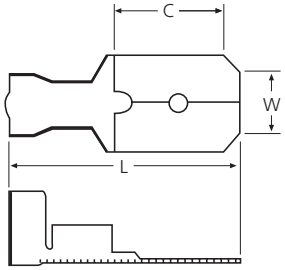


Technical Table

Code	Stranded Wire Item No.	Dimensions (mm)		
		L	C	W
UDF	0.5 - 2.0	19.0	7.5	6.6
UDF2		16.0	6.4	3.2
UDF4		15.5	6.5	5.0
UDFC		19.0	7.4	6.8

"C" – with clip

Uninsulated Disconnect - Male

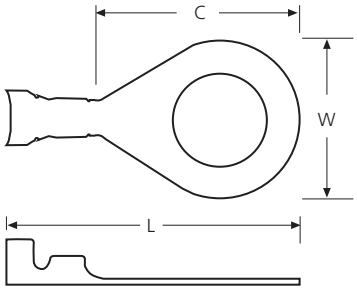




Technical Table

Code	Stranded Wire Item No.	Dimensions (mm)		
		L	C	W
UDM	0.5 - 2.0	20.0	7.5	6.3

Uninsulated Ring Lug

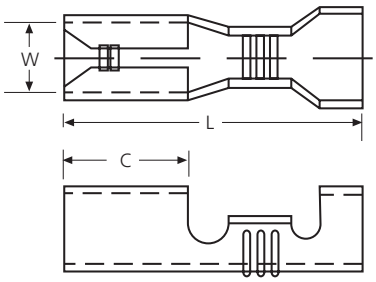




Technical Table

Code	Stranded Wire Item No.	Dimensions (mm)		
		L	C	W
UR10	0.5 - 2.0	34.0	24.0	18.5
UR8		26.0	17.5	13.8
UR6		20.8	12.6	10.0
UR5		-		
UR4		19.4	11.2	8.5
UR3		15.6	9.4	7.0

Uninsulated Bullet – Female / Male

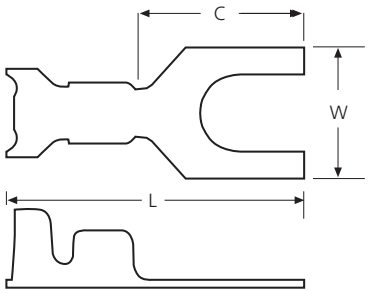




Technical Table

Code	Stranded Wire Item No.	Dimensions (mm)		
		L	C	W
UULF4	0.5 - 2.0	17.0	6.7	3.95
UULM4		17.8	8.4	4.0

Uninsulated Spade

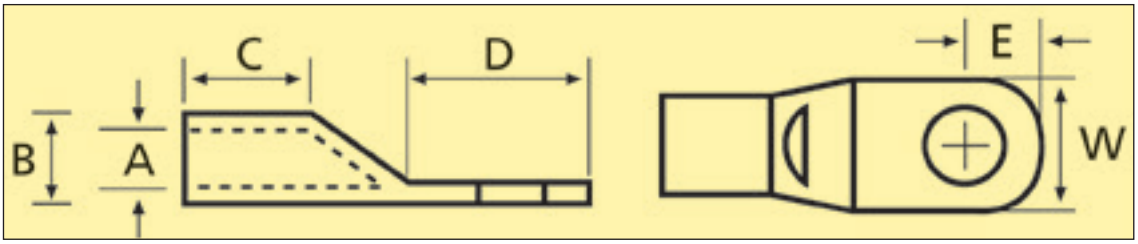




Technical Table

Code	Stranded Wire Item No.	Dimensions (mm)		
		L	C	W
U$4	0.5 - 2.0	22,0	6,8	6,60

HT Heavy Duty Lugs



Technical Table

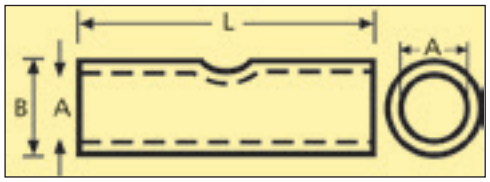
Cable Size (mm^2)	Stud (mm)	Code	Dimensions (mm)						
			Barrel				Spade		
			A ID	B OD	t Thickness	C Length	D Length	E Hole to End	W Width
1.5	3	HT13	1.9	3.8	0.95	7	9	5	7
	4	HT14	↓	↓	↓	↓	12	↓	7
	5	HT15	↓	↓	↓	↓	12	▼	8
	6	HT16	▼	▼	▼	▼	13	6	9
2.5	3	HT23	2.4	4.2	0.90	8	9	5	7
	4	HT24	↓	↓	↓	↓	12	↓	7
	5	HT25	↓	↓	↓	↓	12	▼	9
	6	HT26	↓	↓	↓	↓	13	6	10
	8	HT28	▼	▼	▼	▼	15	8	12
4	3	HT43	2.8	4.7	0.95	8	9	5	7
	4	HT44	↓	↓	↓	↓	12	↓	7
	5	HT45	↓	↓	↓	↓	12	▼	9
	6	HT46	↓	↓	↓	↓	13	6	10
	8	HT48	↓	↓	↓	▼	17	7	13
	10	HT410	▼	▼	▼	11	19	8	14
6	4	HT64	3.4	5.3	0.95	9	12	5	8
	5	HT65	↓	↓	↓	↓	12	5	9
	6	HT66	↓	↓	↓	↓	13	6	10
	8	HT68	↓	↓	↓	▼	17	7	13
	10	HT610	▼	▼	▼	11	20	8	15
10	5	HT105	4.4	6.3	0.95	11	12	5	9
	6	HT106	↓	↓	↓	↓	13	6	10
	8	HT108	↓	↓	↓	↓	17	8	13
	10	HT1010	↓	↓	↓	▼	19	8	15
	12	HT1012	▼	▼	▼	12	20	10	19
16	5	HT165	5.5	7.6	1.05	12	13	6	11
	6	HT166	↓	↓	↓	↓	13	6	11
	8	HT168	↓	↓	↓	↓	18	8	13
	10	HT1610	↓	↓	↓	↓	20	8	15
	12	HT1612	↓	↓	↓	↓	25	11	18
	16	HT1616	▼	▼	▼	▼	27	13	24
25	6	HT256	6.9	9.0	1.05	15	16	6	14
	8	HT258	↓	↓	↓	↓	17	8	14
	10	HT2510	↓	↓	↓	↓	18	8	16
	12	HT2512	↓	↓	↓	↓	21	11	18
	16	HT2516	▼	▼	▼	▼	27	13	24
35	6	HT356	8.2	10.7	1.25	15	18	8	16
	8	HT358	↓	↓	↓	↓	18	9	↓
	10	HT3510	↓	↓	↓	↓	19	9	▼
	12	HT3512	↓	↓	↓	▼	22	10	18
	16	HT3516	▼	▼	▼	16	30	13	24
50	6	HT506	10.0	12.8	1.40	16	18	8	18
	8	HT508	↓	↓	↓	16	18	9	18
	10	HT5010	↓	↓	↓	17	24	10	20
	12	HT5012	↓	↓	↓	18	24	10	20
	14	HT5014	↓	↓	↓	↓	30	13	26
	16	HT5016	↓	↓	↓	↓	↓	↓	↓
	20	HT5020	▼	▼	▼	▼	▼	▼	▼

HT Heavy Duty Lugs

Technical Table

Cable Size (mm²)	Stud (mm)	Code	Dimensions (mm)						
			Barrel				Spade		
			A ID	B OD	t Thickness	C Length	D Length	E Hole to End	W Width
70	8	**HT708**	11.7	15.0	1.65	21	20	10	21
	10	**HT7010**	↓	↓	↓	↓	26	11	22
	12	**HT7012**	↓	↓	↓	↓	28	12	22
	16	**HT7016**	↓	↓	↓	22	32	14	28
	20	**HT7020**	↓	↓	↓	22	34	15	30
95	8	**HT958**	13.5	17.4	1.95	23	24	10	25
	10	**HT9510**	↓	↓	↓	↓	26	13	26
	12	**HT9512**	↓	↓	↓	↓	28	13	26
	16	**HT9516**	↓	↓	↓	↓	32	14	28
	20	**HT9520**	↓	↓	↓	↓	36	16	30
120	10	**HT12010**	15.5	19.8	2.15	26	26	12	27
	12	**HT12012**	↓	↓	↓	↓	28	12	28
	16	**HT12016**	↓	↓	↓	↓	32	14	30
	20	**HT12020**	↓	↓	↓	↓	36	16	32
150	10	**HT15010**	17.0	22.0	2.50	27	31	12	31
	12	**HT15012**	↓	↓	↓	↓	33	16	32
	16	**HT15016**	↓	↓	↓	↓	35	↓	↓
	20	**HT15020**	↓	↓	↓	↓	36	↓	↓
185	10	**HT18510**	19.0	24.4	2.70	29	29	13	34
	12	**HT18512**	↓	↓	↓	↓	31	16	34
	16	**HT18516**	↓	↓	↓	↓	34	16	36
	20	**HT18520**	↓	↓	↓	↓	40	19	36
240	10	**HT24010**	21.5	27.7	3.10	33	38	16	40
	12	**HT24012**					↓	↓	
	16	**HT24016**							

HT Heavy Duty Ferrules



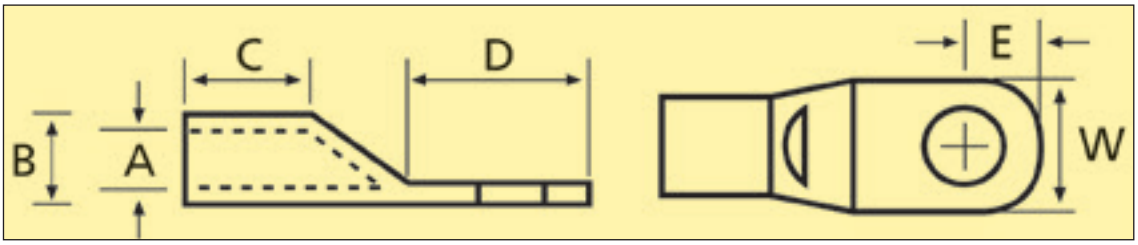
Random samples submitted to the SABS complied with SABS IEC1238-1:1993 and the relevant test report is freely available upon request.

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Technical Table

Cable Size (mm²)	Code	Dimensions (mm)		
		A I.D	B OD	L Length
1.5	**HT1F**	1.9	3.8	12
2.5	**HT2F**	2.4	3.9	15
4	**HT4F**	2.8	4.7	15
6	**HT6F**	3.4	5.3	15
10	**HT10F**	4.4	6.3	22
16	**HT16F**	5.5	7.6	22
25	**HT25F**	6.9	9.0	24
35	**HT35F**	8.2	10.7	27
50	**HT50F**	10.0	12.8	30
70	**HT70F**	11.7	15.0	34
95	**HT95F**	13.5	17.4	38
120	**HT120F**	15.5	19.8	42
150	**HT150F**	17.0	22.0	48
185	**HT185F**	19.0	24.4	53
240	**HT240F**	21.5	27.7	60

HTB Standard Lugs



Technical Table

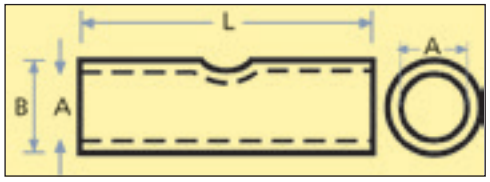
Cable Size (mm^2)	Stud (mm)	Code	Dimensions (mm)						
			Barrel				Spade		
			A ID	B OD	t Thickness	C Length	D Length	E Hole to End	W Width
1.5	3	HTB13	1.8	3.7	0.95	5	9	4	8
	4	HTB14	↓	↓	↓	↓	↓	↓	↓
	5	HTB15							
	6	HTB16							
2.5	3	HTB23	2.4	4.0	0.80	7	11	5	8
	4	HTB24	↓	↓		↓	↓	↓	8
	5	HTB25							10
	6	HTB26							10
	8	HTB28		4.3	0.95	8	15	8	12
4	3	HTB43	3.1	4.8	0.85	7	11	5	10
	4	HTB44	↓	↓	↓	↓	↓	↓	↓
	5	HTB45							
	6	HTB46							
	8	HTB48		4.9	0.90	8	17	7	13
	10	HTB410		4.9	0.90	11	19	8	14
6	4	HTB64	3.4	5.1	0.85	9	11	5	10
	5	HTB65	↓	↓	↓	↓	11	5	10
	6	HTB66					15	6	12
	8	HTB68					15	6	12
	10	HTB610		5.6	1.10	11	20	8	15
10	5	HTB105	4.5	6.2	0.85	9	13	6	12
	6	HTB106	↓	↓	↓	↓	13	↓	↓
	8	HTB108					15		
	10	HTB1010		6.6	1.05	11	19	8	15
	12	HTB1012		6.6	1.05	12	20	10	19
16	5	HTB165	5.5	7.2	0.85	12	14	7	12
	6	HTB166	↓	↓	↓	↓	↓	↓	↓
	8	HTB168							
	10	HTB1610		7.6	1.05		20	8	15
	12	HTB1612		↓	↓		25	11	18
	16	HTB1616					27	13	24
25	6	HTB256	6.9	8.9	1.00	12	14	7	13
	8	HTB258	↓	↓	↓	↓	14	7	16
	10	HTB2510					21	10	18
	12	HTB2512		9.4	1.25	15	21	11	18
	16	HTB2516		9.4	1.25	15	27	13	24
35	6	HTB356	8.2	10.6	1.20	12	18	9	15
	8	HTB358	↓	↓	↓	↓	18	9	15
	10	HTB3510					21	10	18
	12	HTB3512					21	10	18
	16	HTB3516		11.2	1.50	16	30	13	24
50	6	HTB506	10.0	12.9	1.45	16	21	10	18
	8	HTB508	↓	↓	↓	↓	↓	↓	18
	10	HTB5010							20
	12	HTB5012							20
	14	HTB5014						13	26
	16	HTB5016						↓	↓
	20	HTB5020							

HTB Standard Lugs

Technical Table

Cable Size (mm²)	Stud (mm)	Code	Dimensions (mm)						
			Barrel				Spade		
			A ID	B OD	t Thickness	C Length	D Length	E Hole to End	W Width
70	6	**HTB706**	11.7	15.2	1.75	18	25	12	21
	8	**HTB708**	↓	↓	↓	↓	↓	↓	↓
	10	**HTB7010**					↓	↓	↓
	12	**HTB7012**					32	14	28
	16	**HTB7016**					34	15	30
	20	**HTB7020**							
95	8	**HTB958**	13.5	17.4	1.95	20	26	13	25
	10	**HTB9510**	↓	↓	↓	↓	↓	↓	↓
	12	**HTB9512**				↓	↓	↓	↓
	16	**HTB9516**				23	32	14	28
	20	**HTB9520**				23	36	16	30
120	8	**HTB1208**	15.5	19.8	2.15	22	28	14	28
	10	**HTB12010**	↓	↓	↓	↓	↓	↓	↓
	12	**HTB12012**					↓	↓	↓
	16	**HTB12016**					32	16	32
	20	**HTB12020**					36	16	
150	8	**HTB1508**	17.0	21.7	2.35	26	32	16	30
	10	**HTB15010**	↓	↓	↓	↓	↓	↓	↓
	12	**HTB15012**					↓		↓
	16	**HTB15016**					36		32
	20	**HTB15020**							
185	10	**HTB18510**	18.5	23.5	2.50	32	34	17	34
	12	**HTB18512**	↓	↓	↓	↓	↓	↓	↓
	16	**HTB18516**				↓	↓	↓	↓
	20	**HTB18520**				29	40	19	36
240	10	**HTB24010**	21.5	27.0	2.75	38	40	20	38
	12	**HTB24012**	↓	↓	↓	↓	↓	↓	↓
	16	**HTB24016**				↓	↓		↓
	20	**HTB24020**				33	42		40
300	10	**HTB30010**	24.5	31.0	3.25	42	44	22	43
	12	**HTB30012**	↓	↓	↓	↓	↓	↓	↓
	16	**HTB30016**				↓	↓	↓	↓
	20	**HTB30020**				35	45	18	45
400	Blank	**HTB400**	28.5	36.5	4.00	44	52	BLANK	50
500	Blank	**HTB500**	31.5	40.5	4.50	48	56	BLANK	56
630	Blank	**HTB630**	35.0	45.0	5.00	56	66	BLANK	65

HTB Standard Ferrules



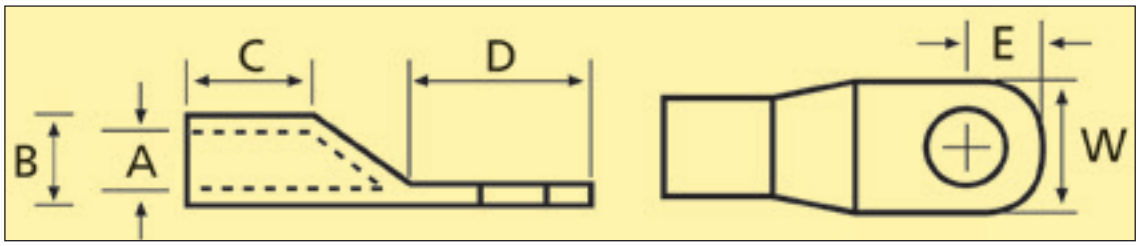
Random samples submitted to the SABS complied with SABS IEC61238 and the relevant test report is freely available upon request.

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SABS IEC61238 / AUTHORISATION NO: 0902175.

Technical Table

Cable Size (mm²)	Code	Dimensions (mm)		
		A I.D	B OD	L Length
1.5	**HTB1F**	1.8	3.7	12
2.5	**HTB2F**	2.4	4.0	15
4	**HTB4F**	3.1	4.8	15
6	**HTB6F**	3.4	5.1	15
10	**HTB10F**	4.5	6.2	22
16	**HTB16F**	5.5	7.2	22
25	**HTB25F**	6.9	8.9	24
35	**HTB35F**	8.2	10.6	27
50	**HTB50F**	10.0	12.9	30
70	**HTB70F**	11.7	15.2	34
95	**HTB95F**	13.5	17.4	38
120	**HTB120F**	15.5	19.8	42
150	**HTB150F**	17.0	21.7	48
185	**HTB185F**	18.5	23.5	53
240	**HTB240F**	21.5	27.0	60
300	**HTB300F**	24.5	31.0	67
400	**HTB400F**	28.5	36.5	80
500	**HTB500F**	31.5	40.5	90
630	**HTB630F**	35.0	49.0	110

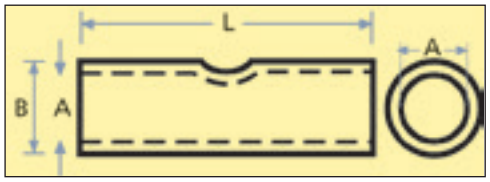
XLPE Lugs



Technical Table

Cable Size (mm²)	Stud (mm)	Code	Dimensions (mm)						
			Barrel			Spade			
			A ID	B OD	t Thickness	C Length	D Length	E Hole to End	W Width
35	8	**HTX35-8**	7.3	10.5	2.0	16.0	24.0	11.0	19.0
	10	**HTX35-10**	↓	↓	↓	↓	↓	↓	↓
	13	**HTX35-12**	↓	↓	↓	↓	↓	↓	↓
50	8	**HTX50-8**	8.8	12.3	3.0	20.0	24.0	11.0	19.0
	10	**HTX50-10**	↓	↓	↓	↓	↓	↓	↓
	12	**HTX50-12**	↓	↓	↓	↓	↓	↓	↓
70	10	**HTX70-10**	10.4	14.6	4.2	210	27.0	12.0	20.0
	12	**HTX70-12**	↓	↓	↓	↓	↓	↓	↓
95	10	**HTX95-10**	12.1	17.0	4.7	24.0	28.0	13.0	24.0
	12	**HTX95-12**	↓	↓	↓	↓	↓	↓	↓
120	12	**HTX120-12**	14.0	19.1	5.0	26.0	18.0	1.30	26.0
150	12	**HTX150-12**	15.3	21.3	5.8	31.0	37.0	15.0	30.0
185	12	**HTX185-12**	17.0	23.7	6.4	34.0	40.0	16.0	33.0
240	12	**HTX240-12**	20.0	27.1	7.2	34.0	41.0	16.0	37.0
300	12	**HTX300-12**	21.6	30.5	9.0	38.0	48.0	16.0	42.0
400	16	**HTX400-16**	24.5	34.6	10.2	51.0	49.0	21.0	48.0
500	16	**HTX500-16**	28.5	38.9	10.5	510	52.0	25.0	54.0
630	16	**HTX630-16**	33.0	45.0	12.0	53.0	65.0	28.0	64.0

XLPE Ferrules



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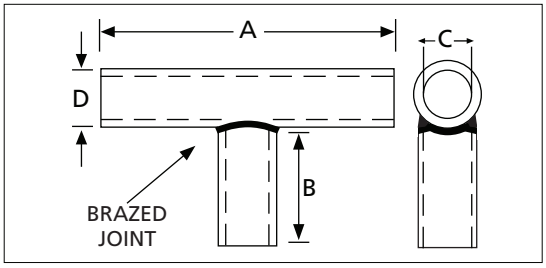
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SABS IEC61238 / Authorisation No: 0902175.

Technical Table

Cable Size (mm²)	Code	Dimensions (mm)		
		A I.D	B OD	L Length
35	**HTFX35**	7.3	10.5	38.0
50	**HTFX50**	8.8	12.3	42.0
70	**HTFX70**	10.4	14.6	43.0
95	**HTFX95**	12.1	17.0	45.0
120	**HTFX120**	14.0	19.1	55.0
150	**HTFX150**	15.3	21.3	58.0
185	**HTFX185**	17.0	23.7	64.0
240	**HTFX240**	20.0	27.1	70.0
300	**HTFX300**	21.6	30.5	75.0
400	**HTFX400**	24.5	34.6	80.0
500	**HTFX500**	28.5	38.9	90.0
630	**HTFX630**	33.0	45.0	100.0

T Ferrules

Code	Dimensions (mm)			
	A	B	C	D
HT2TF	18.5	9.5	2.4	3.9
HT4TF	21.0	10.0	2.8	4.7
HT6TF	32.0	15.0	3.4	5.3
HT10TF	44.0	20.0	4.4	6.3
HT16TF	56.0	25.0	5.5	7.6
HT25TF	70.0	30.0	6.9	9.0
HT35TF	74.0	32.0	8.2	10.7
HT50TF	78.0	34.0	10.0	12.8
HT70TF	86.0	36.0	11.7	15.0
HT95TF	94.0	38.0	13.5	17.4
HT120TF	105.0	40.0	15.5	19.8

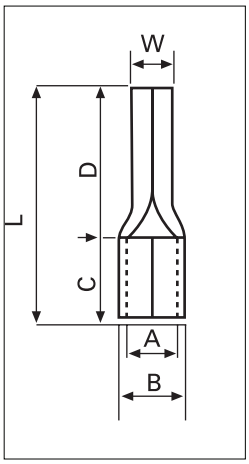


Random samples submitted to the **SABS complied with SABS IEC61238-1:1993** and the relevant test report is freely available upon request.

The test report relates only to the items submitted for the actual test and it furnishes or implies no guarantee whatsoever in respect of similar items that have not been tested. The performance of the test and the issue of the test report do not imply approval by the SABS of the quality and/or performance of the items that have been tested but signifies that the items tested met the requirements of **SABS IEC61238-1:1993.**
RCC NO: 0902175

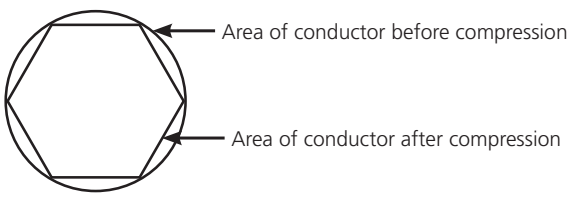
HT Pin Terminals

Code	Dimensions (mm)						
	Size (mm)	A	B	C	D	L	W
HTPTNB513	6	3.4	5.6	6.0	14.0	20.0	2.8
HTPTNB10121	10	4.5	6.9	8.0	14.0	22.0	4.3
HTPTNB1613	16	5.8	8.4	10.0	16.0	26.0	5.5
HTPTNB2515	25	7.0	9.5	13.5	20.0	33.5	6.8
HTPTNB3520	35	8.4	11.8	16.0	24.5	40.5	8.0
HTPTNB5012	50	9.6	13.6	19.0	26.0	45.0	9.5
HTPTNB7025	70	11.4	15.8	24.0	31.0	55.0	11.0
HTPTNB9525	95	13.5	18.9	24.0	31.0	55.0	12.5



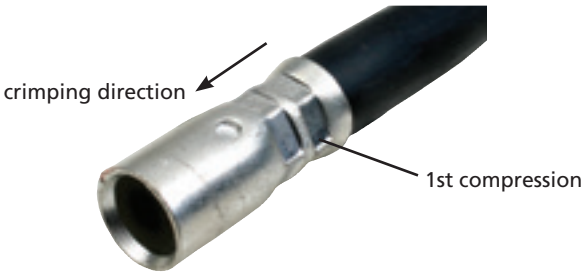
Important Crimping Points

A compression terminal with little material can be crimped with a crimp die designed for this geometry. The same terminal crimped with another die from a different system, where the die is designed for a terminal with a larger barrel, would result in lower crimp reduction which would cause overheating due to poor electrical contact.



Assembly Instructions for Cable Lugs and Ferrules

- Strip conductor according to insertion depth (+ 10% because of length changing of crimp sleeve)
- Conductor ends must be cleaned before termination
- Insert conductor fully into cable lug or ferrule
- Observing the crimping direction (see pic below), crimp the cable lug or ferrule using the appropriate crimping tool





Connectors



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DRC Series	6/1
DT Series	6/1
DTHD Series	6/1
DTM Series	6/1
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DTV Series	6/2
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Solenoid Connectors	
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RoHS The restriction of the use of certain hazardous substances in electrical and electronic equipment

HF (halogenfree) Halogen Free

LFH (Limited Fire Hazard) Limited Fire Hazard

Deutsch Connectors Specifications

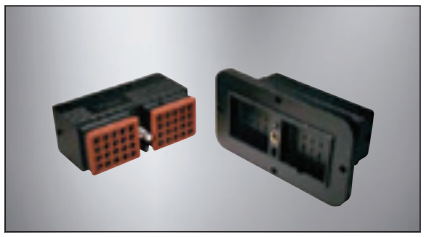
DRB Series

- Accepts contact sizes 4 (100 amps), 8 (60 amps), 12 (25 amps), 16 (13 amps), and 20 (7.5 amps)
- 6-22 AWG
- 48, 60, and 102 cavity arrangements
- Flange mount
- Rectangular, thermoplastic housing
- Jackscrew for mating
- Wedgelocks assure contact alignment and retention



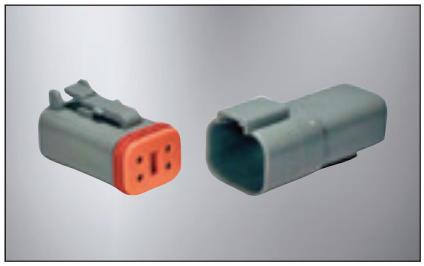
DRC Series

- Accepts contact sizes 16 (13 amps) and 20 (7.5 amps)
- 14-22 AWG
- 24, 38, 40, 50, 60, 64, 70, and 80 cavity arrangements
- Inline, flange, and PCB mount
- Rectangular, thermoplastic housing
- Jackscrew for mating



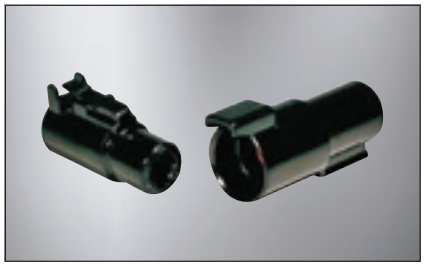
DT Series

- Accepts contact size 16 (13 amps)
- 14-20 AWG
- 2, 3, 4, 6, 8, and 12 cavity arrangements
- Inline, flange, and PCB mount
- Rectangular, thermoplastic housing
- Integrated latches for mating
- Wedgelocks assure contact alignment and retention



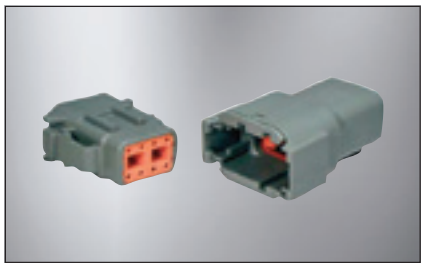
DTHD Series

- Accepts contact sizes 4 (100 amps), 8 (60 amps), and 12 (25 amps)
- 6-14 AWG
- 1 cavity arrangement
- Inline and flange mount
- Circular, thermoplastic housing
- Integrated latch for mating



DTM Series

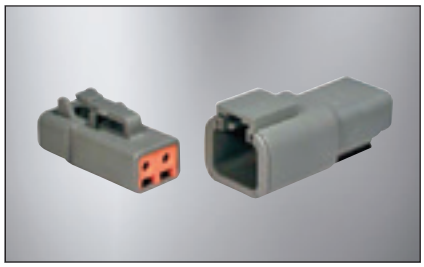
- Accepts contact size 20 (7.5 amps)
- 16-22 AWG
- 2, 3, 4, 6, 8, and 12 cavity arrangements
- Inline, flange, and PCB mount
- Rectangular, thermoplastic housing
- Integrated latches for mating
- Wedgelocks assure contact alignment and retention



Deutsch Connectors Specifications

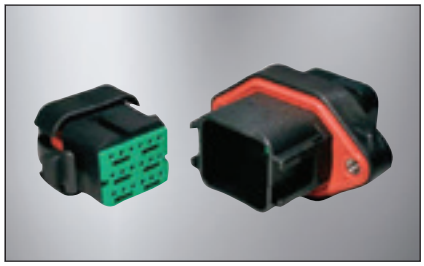
DTP Series

- Accepts contact size 12 (25 amps)
- 10-14 AWG
- 2 and 4 cavity arrangements
- Inline, flange, and PCB mount
- Rectangular, thermoplastic housing
- Integrated latches for mating
- Wedgelocks assure contact alignment and retention



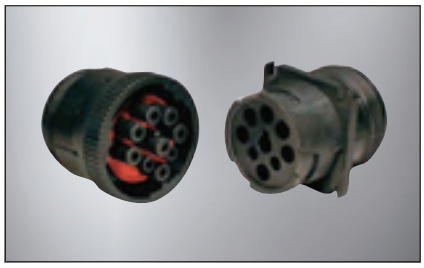
DTV Series

- Accepts contact size 16 (13 amps)
- 14-20 AWG
- 18 cavity arrangement
- Flange mount
- Rectangular, thermoplastic housing
- Integrated latches for mating
- Wedgelocks assure contact alignment and retention



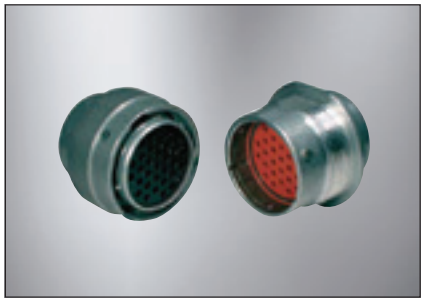
HD10 Series

- Accepts contact sizes 4 (100 amps), 12 (25 amps), and 16 (13 amps)
- 6-20 AWG
- 3, 4, 5, 6, and 9 cavity arrangements
- Inline, flange, and PCB mount
- Circular, thermoplastic housing
- Coupling ring for mating



HD30 Series

- Accepts contact sizes 4 (100 amps), 8 (60 amps), 12 (25 amps), 16 (13 amps), and 20 (7.5 amps)
- 6-22 AWG
- 2, 6, 8, 9, 14, 16, 18, 19, 20, 21, 23, 29, 31, 33, 35 and 47 cavity arrangements
- Inline or flange mount
- Circular, aluminium housing
- Coupling ring for mating



HDP20 Series

- Accepts contact sizes 4 (100 amps), 8 (60 amps), 12 (25 amps), 16 (13 amps), and 20 (7.5 amps)
- 6-22 AWG
- 2, 6, 8, 9, 14, 16, 18, 19, 20, 21, 23, 29, 31, 33, 35
- and 47 cavity arrangements
- Inline or flange mount
- Circular, thermoplastic housing
- Coupling ring for mating



Deutsch Performance Specifications

ARC Resistance	All dielectric materials withstand a minimum of 130 seconds per ASTM D-495.
Corrosion Resistance	Connectors show no evidence of corrosion after exposure to 48 hours of salt spray per MIL-STD 1344 method 1001.
Dielectric Withstanding Voltage	Current leakage less than 2 milliamps at 1500 VAC.
Durability	No electrical or mechanical defects after 100 cycles of engagement or disengagement.
Fluid Resistance	Connectors show no damage when exposed to most fluids used in industrial applications.
Insulation Resistance	1000 megohms min. at 25° C.
Physical Shock	No unlocking, unmating or other unsatisfactory result during or after 50 g's in each of three mutually perpendicular planes. No electrical discontinuities longer than 1 microsecond. MIL-STD 202, method 213, Condition "C."
Silicone Insert	Front and rear silicone inserts are devoid of all organic matter.
Submersion	Properly wired and mated connection will withstand immersion under three feet of water without loss of electrical qualities or leakage.
Temperature	Operative at temperatures from -55° C to +125° C at rated current.
Thermal Cycle	No cracking, chipping, or leaking after twenty cycles from -55° C to +125° C.
Vibration	Maintains continuity and exhibits no mechanical or physical damage after vibration levels of 20 g's at 10-2000 Hz.
Common Contact System	All wires are terminated by a single contact system. The only variation in contacts is dictated by wire gauge. One contact, whether it is a solid or stamped & formed can be assembled with the complete Deutsch connector family. The Common Contact System applies to a common system of contacts, tooling processes, and terminations.

	Contacts withstand a minimum load of:		
Contact Retention	**Contact Size** 4 8 12 16 20	**Load** 35 lbs. 35 lbs. 30 lbs. 25 lbs. 20 lbs.	
Contact Current Rating @ 125° C (continuous)	**Contact Size** #4 #8 #12 #16 #20	**Max Current** 100 amps 60 amps 25 amps 13 amps 7.5 amps	
Contact Millivolt Drop (Solid Contacts)	**Wire AWG** 4 8 12 16 20	**Test Current** 100 amps 60 amps 25 amps 13 amps 7.5 amps	**Millivolt Drop*** 60 60 60 60 60
Contact Millivolt Drop (Stamped & Formed Contacts)	**Wire AWG** 12 16 20	**Test Current** 25 amps 13 amps 7.5 amps	**Millivolt Drop*** 10 100 100
*Less drop through wire			

M27 & M24 Solenoid Connectors

Available in both straight and 90° swivel form. This range of connectors interface directly with solenoid switch connectors that have either M27 or M24 connection points. 2, 3 & 4 pin versions are available, either as complete kits or in individual components. They are all suitable for use with NW 10 normal profile conduits.

Features

- Suitable for 2, 3 and 4 pin solenoid switches



Material Data

Material	PA66 (Nylon) Housings, Neoprene seals & brass nickel plated contacts
Sealing Rating	IP67
Temp Range	-25°C to +80°C

Technical Table 90° Swivel Fitting

Code	Connection Type	Number of Pins
HTSCM24902	M24 x 1.0mm	2
HTSCM24903	M24 x 1.0mm	3
HTSCM27902	M27 x 1.0mm	2
HTSCM27903	M27 x 1.0mm	3
HTSCM27904	M27 x 1.0mm	4

All dimensions in mm. Subject to technical changes.

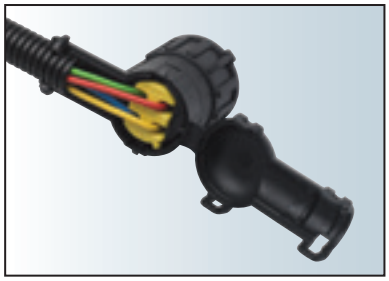
Technical Table Straight Swivel Fitting

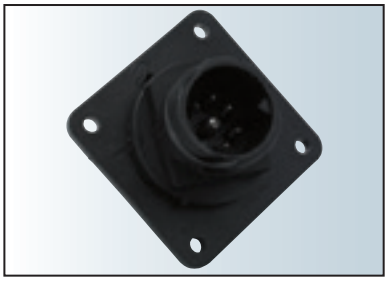
Code	Connection Type	Number of Pins
HTSCM24S2	M24 x 1.0mm	2
HTSCM24S3	M24 x 1.0mm	3
HTSCM27S2	M27 x 1.0mm	2
HTSCM27S3	M27 x 1.0mm	3
HTSCM27S4	M27 x 1.0mm	4

All dimensions in mm. Subject to technical changes.

Also available on request





Notes

Appendix

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Standards	
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Abbreviations Table for Product Materials and Colours

Abbreviation Material Table

Abbreviation*	Material
ABS	Acrylonitrile Butadiene Styrene
ALU	Aluminium
AR	Acrylic
CN	Cotton
CR	Chloroprene
EPDM	Ethylene-Propylene-Diene-Terpolymer-Rubber
FPM	Fluoroelastomer
HIR	Polyamide 6.6 high impact modified
HIRHS	Polyamide 6.6 high impact modified, heat stabilised
HL	Halar
HS	Polyamide 6.6 heat stabilised
HSW	Polyamide 6.6, heat stabilised and UV resistant on request
HV	Helvin
IIR	Butyl rubber
PA	Polyamide
PA11	Polyamide 11
PA12	Polyamide 12
PA46	Polyamide 4.6
PA6/PA66	Polyamide 6 / Polyamide 6.6
PAP	Paper
PC	Polycarbonate
PE	Polyethylene
PEN	Polyethylenephtalate
PET	Polyester
PEX	Polyolefin, cross-linked
PI	Polyimide
PK	Polyketone
PO	Polyolefin
POA	Elastomer modified
POM	Polyacetal
PP	Polypropylene
PPESB	Polyphenylenether, Polysterene
PPMOD	Polypropylene
PPO	Noryl
PS	Polystyrene
PTFE	Polytetrafluoroethylene
PUR	Polyurethane
PVC	Polyvinylchloride
PVDF	Polyvinylidene fluoride
SI	Silicone
SP	Saturised Polyester
SS	Stainless Steel
ST	Steel
TPE	Thermoplastic Elastomer
TPU	Thermoplastic Polyurethane
TZ	Ethylentetrafluorineethylene
V0	Polyamide 6.6 V0
W	Polyamide 6.6 UV resistant

*according to EN ISO 1043 Part 1 and ISO 1629

Abbreviation Colour Table

Abbreviation*	Colour
BK	Black
BN	Brown
BL	Blue
GD	Gold
GR	Green
GRYE	Green-Yellow
GY	Grey
OG	Orange
PK	Pink
RD	Red
SR	Silver
VT	Violet
WT	White

*according to DIN IEC 757

Abbreviation Colour Table

Abbreviation*	Colour
CL	Transparent
NT	Natural
YL	Yellow
BE	Beige
XX	Special colour
BV	Zinc-plated Metal
GC	Brass chromated
WC	White Chromated

* according to HellermannTyton

RoHS The restriction of the use of certain hazardous substances in electrical and electronic equipment

HF (halogenfree) Halogen Free

LFH (Limited Fire Hazard) Limited Fire Hazard

Definition of the degrees of protection according to EN 60529

The levels of protection are indicated by a code made up of two constant letters IP and two characteristic numbers for the degree of protection, e.g. IP54.

Degree of protection against access and foreign bodies

First characteristic numeral	Designation	Scope of protection
0	Non-protected	No special protection for persons against direct contact with live or moving parts. No protection of the equipment against ingress of solid foreign objects.
1	Protection against large foreign bodies	Protection against accidental contact of large areas with live and internal moving parts, e.g. back of hand, but not protection against deliberate access to the parts. Protection against ingress of solid foreign objects with a diameter greater than 50mm.
2	Protection against medium-sized foreign bodies	Protection against contact between the finger and live or internal moving parts. Protection against ingress of solid foreign objects with a diameter greater than 12.5mm.
3	Protection against small foreign bodies	Protection against contact between live or internal moving parts and tools, wires and the like with a thickness greater than 2.5mm. Protection against ingress of solid foreign objects with a diameter greater than 2.5mm.
4	Protection against granular foreign objects	Protection against contact between live or internal moving parts and tools, wires and the like with a thickness greater than 1mm. Protection against ingress of solid foreign objects with a diameter greater than 1mm.
5	Protection against dust deposits	Complete protection against contact with live or internal moving parts, protection against hazardous dust deposits. The ingress of dust is not completely prevented, but dust may not penetrate in such quantities as to impair the function.
6	Protection against dust entry	Complete protection against contact with live or internal moving parts. Protection against the ingress of dust.

Degrees of protection for water

Second characteristic numeral	Designation	Scope of protection
0	Non-protected	No special protection.
1	Protection against vertically dripping water	Water dripping vertically must cause no damage.
2	Protection against dripping water (tilted)	Water dripping at an angle of 15° to the vertical from any direction must cause no damage.
3	Protection against spraying water	Water dripping at an angle of 60° to the vertical from any direction must cause no damage.
4	Protection against splashing water	Water that splashes against the equipment from any direction must cause no damage.
5	Protection against water jets	A water jet from a nozzle that is directed against the equipment from any direction must cause no damage.
6	Protection against flooding	Water must not penetrate the equipment in hazardous quantities in cases of temporary flooding, e.g. due to heavy seas.
7	Protection during temporary immersion	Water must not penetrate the equipment in hazardous quantities if the equipment is immersed in water under the specified conditions of pressure and time.
8	Protection during continuous immersion	Water must not penetrate the equipment in hazardous quanti-ties if the equipment is immersed in water.



First index: Protection against contact and ingress of foreign objects.

Second index: Protection against liquids.

Example: Code IP65

First numeral
Protection against solid bodies

IP

0	No protection
1	Protected against solid bodies greater than 50 mm (e.g. involuntary hand contact)
2	Protected against solid bodies greater than 12 mm (e.g. fingers)
3	Protected against solid bodies greater than 2.5 mm (e.g. tools, cables...)
4	Protected against solid bodies greater than 1 mm (e.g.: small tools, fine cables...)
5	Protected against dust (no harmful deposits)
6	Fully protected against dust

Second numeral
Protection against liquids

IP

0	No protection
1	Protected against dripping water (condensation)
2	Protected against falling water up to 15° from the vertical
3	Protected against rain water up to 60° from the vertical
4	Protected against water splashing in all directions.
5	Protected against water jets from all directions
6	Protected against wave-like water jets from all directions
7	Protected against immersion
8	...m Protected against the effects of prolonged immersion under water

Third numeral
Mechanical protection

IK

0	No protection
01	Impact energy 0.150 J.
02	Impact energy 0.200 J.
03	Impact energy 0.350 J.
04	Impact energy 0.500 J.
05	Impact energy 0.700 J.
06	Impact energy 1.00 J.
07	Impact energy 2.00 J.
08	Impact energy 5.00 J.
09	Impact energy 10.00 J.
10	Impact energy 20.00 J.

Standards Overview

CSA	Canadian Standards Association	Canada	
cUL	Canadian Underwriters Laboratories	Canada	
BV	Bureau Veritas	France	
DEF STAN	Defence Standard	Great Britain	
DNV	Det Norske Veritas	Norway	
E.D.F.	Electricité de France	France	
NF-F	Norme Française Ferroviaire	France	
GL	Germanischer Lloyd	Germany	
LUL	London Underground Tested	Great Britain	
F1 MIL	Military Specification	USA	
SAE - AMS	Society of Automotive Engineers - Aerospace Material Specifications	International	

Standards Overview

UL, UL224	Underwriters Laboratories (Yellow Card)	USA	
VDE	German Commission for Electrical, Electronic and Information Technologies of DIN and VDE	Germany	
VG	Verteidigungsgerätenorm der Bundeswehr	Germany	
FIMKO	Suomalainen testaus- ja sertifiointiyritys	Finland	
DEMKO	Danske Elektriske Materialekontrol	Denmark	
NEMKO	Norges Elektriske Materiellkontroll	Norway	
SEMKO	Sveriges Elektriska Materielkontroll	Sweden	
KEMA KEUR	KEMA Quality B.V	The Netherlands	
cULus	Underwriters Laboratories	Canada, USA	
CEBEC	Comité Electrotechnique Belgic	Belgium	

Please note that not all of our approvals are product specific. They sometimes relate to the material or the whole product range.

Standards for HellermannTyton Cable Ties

UL	Underwriters Laboratories (USA)	**SAE - AMS**	Society of Automotive Engineers - Aerospace Material Specifications (International)
GL	Germanischer Lloyd (Germany)	**MIL**	Military Specification (USA)
BV	Bureau Veritas (France)	**DEF STAN**	Defence Standard (Great Britain)
DNV	Det Norske Veritas (Norway)	**E.D.F.**	Electricité de France
VG	German Defence Equipment Standard	**VDE**	German Commision for Electrical, Electronic and Information Technologies of DIN and VDE

			Standards								
Type	**Length**	**Width**	**UL**	**GL**	**BV**	**DNV**	**VG 95387 T04 PH66HS-Natural**	**VG 95387 T04 PA66W-black**	**VG 95387 T04 PA66-Natural**	**SAE AS23190 (MIL MS 3367)**	**DIN EN 50146**
T18S	83	2.3	●[1]	●[2]		●[3]			A106A	MS 3367-4[2]	●[6]
T18R	100	2.5	●[1]	●[2]	●[2]	●[1]	A201L	A106B	A106A	MS 3367-4[2]	●[6]
T18RA	100	2.5	●[1]							MS 3367-4[2]	
T18ROS	100	2.5									●[6]
T18I	140	2.5	●[1]		●[2]						●[6]
T18L	200	2.5	●[1]		●[2]						●[6]
T25L	240	2.8	●[1]	●[2]	●[2]						●[6]
T25LL	330	2.8	●[1]	●[2]	●[2]						●[6]
T30R	150	3.5	●[1]	●[2]	●[2]		A208L	A107B	A107B	MS 3367-5[2]	●[6]
T30ROS	145	3.4									●[6]
T30L	190	3.5	●[1]	●[2]	●[2]			A107B	A107A		●[6]
T30LOS	200	3.4									●[6]
T30LL	285	3.5	●[1]	●[2]	●[2]						●[6]
T30LR	260	3.3			●[2]		A207L				●[6]
T40S	145	3.5									●[6]
T40R	175	4.0	●[1]	●[2]	●[2]						●[6]
T40I	290	4.0	●[1]								●[6]
T40L	365	4.0	●[1]								●[6]
T50S	150	4.6	●[1]	●[2]	●[2]						●[6]
T50SOS	150	4.6									●[6]
T50R	200	4.6	●[1]	●[2]	●[2]		A202L	A108B	A108A	MS 3367-1[2]	●[6]
T50ROS	200	4.6									●[6]
T50RDH	200	4.6	●[1]		●[2]						
T50MOS	245	4.6									●[6]
T50I	300	4.6	●[1]	●[2]	●[2]		A203L	A109B	A109A	MS 3367-7[2]	●[6]
T50IDH	300	4.6	●[1]								
T50L	390	4.6	●[1]	●[2]	●[2]		A205L	A110B	A110A	MS 3367-2[2]	●[6]
T50LOS	384	4.6									●[6]
T50LDH	390	4.6	●[1]								
T50LL	445	4.6			●[2]						●[6]
T80I	300	4.7	●[1]	●[2]	●[2]						
T80L	390	4.7	●[1]	●[2]	●[2]		A205L				
T120S	225	7.6	●[1]	●[2]	●[2]						●[6]
T120I	300	7.6	●[1]		●[2]						●[6]
T120R	380	7.6	●[1]	●[2]	●[2]			A111B	A111A	MS 3367-3[2]	●[6]
T120M	460	7.6		●[2]	●[2]						●[6]
T120XM	600	7.6			●[2]						●[6]
T120L	760	7.6	●[1]		●[2]			A112B	A112B	MS 3367-3[2]	●[6]
T150R	365	7.6	●[1]	●[2]	●[2]		A204L				●[6]
T150M	530	8.9	●[1]	●[2]	●[2]						●[6]
T150L	820	8.9	●[1]	●[2]	●[2]						●[6]
T150LL	925	8.9	●[1]		●[2]						●[6]
T150XL	1095	8.9	●[1]		●[2]						●[6]
T150XLL	1325	8.9	●[1]		●[2]						●[6]
T250S	225	12.5	●[1]		●[2]						
T250R	520	12.5	●[1]		●[2]						
T250M	565	12.5	●[1]		●[2]						
T250I	725	12.5	●[1]		●[2]						
T250L	880	12.5	●[1]		●[2]						
T255S	120	4.8	●[1]								
T255R	120	4.8	●[1]								
T255M	120	4.8	●[1]								
LK2	120	4.8		●[2]	●[2]						
LK2A	270	4.6	●[1]	●[2]	●[2]						
LK3X	270	8.6	●[1]	●[2]	●[2]						
LK5	535	13.2	●[1]	●[2]	●[2]						

MS3367 according SAE-A53367-1

			Standards						
Type	Length	Width	UL	GL	BV	DNV	VG 95387 T04	SAE AS23190 (MIL MS 3367)	E.D.F.
PE180	180	9.0		●2	●2				HN-33-S-62/97
RPE275	275	9.0							HN-33-S-62/97
RPE350	350	9.0							HN-33-S-62/97
PE530	535	9.0			●2				HN-33-S-62/97
LPH175	175	9.0			●2				
LPH275	100	2.5			●2				
LPH350	100	2.5			●2				
CTT20R	100	2.5	●1						
CTT60R	205	4.7	●1						
LRT230	230	7.6			●3				
RLT120	340	7.6		●2	●2				
RLT150	770	8.9		●2	●2				
REL100	100	6.5	●1						
REL140	140	7.5	●1						
REL250	250	7.5	●1						
RT40R	217	3.9	●1						
RELK2R	200	4.6			●2				
RELK2M	250	4.6			●2				
RELK2I	300	4.6			●2				
RELK2L	350	4.6			●2				
RT50R	140	8.6	●1						
RT50S	165	4.6	●1						
RT250S	230	12.5	●1		●2				
RT250R	516	12.5	●1		●2				
RT250M	570	12.5	●1		●2				
RT250I	729	12.5	●1						
RT250L	878	12.5	●1						
RT250XL	1025	12.5	●1						
T18MR	110	2.3	●1						
IT18R	102	2.3	●1						
IT18FL	111	2.3	●1						
T30MR	160	3.5	●1						
T30RSF	165	3.5	●1						
IT50RT	203	4.7	●1						
T50RD	203	4.7	●1		●2				
IT50L	381	4.7	●1						
T50ML	400	4.6	●1						
T50MR	215	4.6	●1						
T50MS	160	4.6	●1						
IT50R	203	4.7	●1						
T50RSF	216	4.6	●1						
T120MR	400	7.6	●1						
KR6/18	180	6.0		●2					
KR6/35	350	6.0		●2					
KR8/21	210	8.0		●2					
KR8/33	330	8.0		●2					

[1] Polyamide 6.6 (PA66) natural, Polyamide 6.6 Heat stabilised (HS) natural
[2] Polyamide 6.6 (PA66) natural, Polyamid 6.6 UV Resistant (W) black
[3] Polyamide 6.6 (PA66) natural, Polyamide 6.6 Heat stabilised (HS) natural, Polyamide 6.6 UV Resistant (W) black
[4] Polyamide 6.6 (PA66) Heat stabilised (HS) natural
[5] Polyamide 6.6 (PA66) natural
[6] Polyamide 6.6 (PA66), Polyamid 6.6 Heat stabilised (HS) all colours und Polyamide UV Resistant (W)
Subject to changes
All demensions in mm

			Standards						
Type	Length	Width	UL	GL	BV	DNV	VG 95387 T04	SAE AS23190 MIL MS3367	DEF STAN
MAT8SS7	230	7.0		●6	●2				
MAT12SS7	330	7.0		●6	●2				
MAT16SS7	430	7.0		●6	●2				
MAT24SS7	630	7.0		●6	●2				
MAT8SS12	230	12.0		●6	●2				
MAT12SS12	330	12.0		●6	●2				
MAT16SS12	430	12.0		●6	●2				
MAT24SS12	630	12.0		●6	●2				
MBT5S	127	4.6		●7	●7	●7			
MBT8S	201	4.6		●7	●7	●7			
MBT14S	362	4.6		●7	●7	●7			
MBT20S	521	4.6		●7	●7	●7			
MBT27S	681	4.6		●7	●7	●7			
MBT33S	838	4.6		●7	●7	●7			
MBT8H	201	7.9		●7	●7	●7			
MBT14H	362	7.9		●7	●7	●7			
MBT20H	521	7.9		●7	●7	●7			
MBT27H	681	7.9		●7	●7	●7			
MBT33H	838	7.9		●7	●7	●7			
MBT14XH	362	12.3		●7	●7				
MBT20XH	521	12.3		●7	●7				
MBT27XH	681	12.3		●7	●7				
MBT33XH	838	12.3		●7	●7				
Protective Channel LFPC70	–	7.0							61-12/31
Protective Channel LFPC103	–	10.3							61-12/31
Protective Channel LFPC150	–	15.0							61-12/31

[1] Polyamide 6.6 (PA66) natural, Polyamide 6.6 Heat stabilised (HS) natural
[2] Polyamide 6.6 (PA66) natural, Polyamid 6.6 UV Resistant (W) black
[3] Polyamide 6.6 (PA66) natural, Polyamide 6.6 Heat stabilised (HS) natural, Polyamide 6.6 UV Resistant (W) black
[4] Polyamide 6.6 (PA66) natural, Polyamide 6.6 Heat stabilised (HS) natural, black
[5] Polyamide 6.6 (PA66) natural
[6] Stainles Steel Type 316 uncoated, Stainless Steel Type 316 coated
[7] Stainles Steel Type 316 uncoated
Subject to changes
All demensions in mm

Standards for HellermannTyton Fixing Bases

UL Underwriters Laboratories (Yellow Card) (USA)

			Standards
	Length	Width	UL
Self Adhesive Mounting Bases MB3A	19.0	19.0	●
Self Adhesive Mounting Bases MB4A	28.0	28.0	●
Self Adehsive Mounting Bases MB5A	38.0	38.0	●
Mounting Base CTAM 1	20.5	10.2	●
Mounting Base CTAM 2	20.5	10.2	●
Mounting Base CTAM 2	34.0	12.7	●
Mounting Base CTAM 2	54.1	12.7	●
Mounting Base CTAP 1	204	15.7	●
Mounting Base CTAP 2	242	15.7	●
Mounting Base CTAP 2	10.2	7.6	●
Mounting Plate MSMP 5	204.0	15.7	●
Mounting Plate MSMP 6	242.0	15.7	●
Mounting Cradle TM-1/SF	16.0	10.0	●

Standards for HellermannTyton Heat Shrinkable Tubing

UL224 AFT	Underwriters Laboratories (All Flame Test) (USA)
UL224 VW1	Underwriters Laboratories Vertical Wire 1 (USA)
CSA	Canadian Standards Association (Canada)
DNV	Det Norske Veritas (Norway)
NF-F	Norme Francaise du Matériel Ferroviaire (France)
SAE - AMS	Society of Automotive Engineers - Aerospace Material Specifications (International)
MIL	Military Specification (USA)
VG	German Defence Equipment Standard (Germany)
DEF STAN	Defence Standard (Great Britain)
LUL	London Underground (Great Britain)
NSA	Norme Sud Aviation (Airbus Norm)

Type	UL 224 AFT	UL224 VW1	CSA	DNV	MIL/SAE - AMS	VG 95343 T05	DEF STAN	LUL	NFF 00-608	NSA
LVR	●									
HFT-A	●		●	●	DTL-23053/5	●	59-97/3		●	●
HFT-B					DTL-23053/5	●	59-97/3			●
TCN20	●									
TF21		●	●						●	
TF24					DTL-23053/5					
TF31		●	●							
EPS-400					DTL-23053/4					
TA32	●									
TA42	●									
PST-H						●			●	
PST-HT						●				
Viton-E						●				
Kynar		●			DTL-23053/8	●	59-97/3			●
TR27							59-97/3	E1042:A6		
TFE2					DTL-23053/12					
TFE4					DTL-23053/12					

Standards for HellermannTyton Non Shrinkable Tubing

Type	DEF STAN	LUL
Helvin P	59-15/3 D1a	
Helvin XY	59-15/3 D1b	
LFH-tubing LFPT		RSE STD 013
Helsyn rubber tubing H	59-15/3 D2c	
Helsyn PVC-Nitrile rubber tubing NT	59-15/3 D5	
Helsyn Silicone rubber tubing SLP		
PTFE tubing FE	59-15/3 D6	

HellermannTyton UL-File No.:

E 14 35 29

E 19 80 23

E 19 80 24

Standards for HellermannTyton Heat Shrinkable Moulded Shapes

Type	MIL	VG 95343	DEF STAN
Shapes XXXX-G		●	59-97/3
Shapes XXXX-B7	MIL-I-81765		59-97/3
Shapes XXXX-HW21		●	59-97/3
Shapes XXXX-GW24		●	59-97/3
Two-Part Epoxy Adhesive V9500		●	

Standards for HellermannTyton Heat Shrinkable Moulded Shapes Heat-shrinkable Moulded Shapes according to VG-Norm

VG German Defence Equipment Standard (Germany)

Description VG-Norm	Description HellermannTyton
VG 95343 T05 A 001A	HFT-A-3/64-BK
VG 95343 T05 A 001B	HFT-A-3/64-BN
VG 95343 T05 A 001C	HFT-A-3/64-RD
VG 95343 T05 A 001E	HFT-A-3/64-YE
VG 95343 T05 A 001F	HFT-A-3/64-GN
VG 95343 T05 A 001G	HFT-A-3/64-BU
VG 95343 T05 A 001H	HFT-A-3/64-VT
VG 95343 T05 A 001K	HFT-A-3/64-GY
VG 95343 T05 A 001L	HFT-A-3/64-WH
VG 95343 T05 A 002A	HFT-A-1/16-BK
VG 95343 T05 A 002B	HFT-A-1/16-BN
VG 95343 T05 A 002C	HFT-A-1/16-RD
VG 95343 T05 A 002E	HFT-A-1/16-YE
VG 95343 T05 A 002F	HFT-A-1/16-GN
VG 95343 T05 A 002G	HFT-A-1/16-BU
VG 95343 T05 A 002H	HFT-A-1/16-VT
VG 95343 T05 A 002K	HFT-A-1/16-GY
VG 95343 T05 A 002L	HFT-A-1/16-WH
VG 95343 T05 A 003A	HFT-A-3/32-BK
VG 95343 T05 A 003B	HFT-A-3/32-BN
VG 95343 T05 A 003C	HFT-A-3/32-RD
VG 95343 T05 A 003E	HFT-A-3/32-YE
VG 95343 T05 A 003F	HFT-A-3/32-GN
VG 95343 T05 A 003G	HFT-A-3/32-BU
VG 95343 T05 A 003H	HFT-A-3/32-VT
VG 95343 T05 A 003K	HFT-A-3/32-GY
VG 95343 T05 A 003L	HFT-A-3/32-WH
VG 95343 T05 A 004A	HFT-A-1/8-BK
VG 95343 T05 A 004B	HFT-A-1/8-BN
VG 95343 T05 A 004C	HFT-A-1/8-RD
VG 95343 T05 A 004E	HFT-A-1/8-YE
VG 95343 T05 A 004F	HFT-A-1/8-GN
VG 95343 T05 A 004G	HFT-A-1/8-BU
VG 95343 T05 A 004H	HFT-A-1/8-VT
VG 95343 T05 A 004K	HFT-A-1/8-GY
VG 95343 T05 A 004L	HFT-A-1/8-WH
VG 95343 T05 A 004N	HFT-A-1/8-GNYE
VG 95343 T05 A 005A	HFT-A-3/16-BK
VG 95343 T05 A 005B	HFT-A-3/16-BN
VG 95343 T05 A 005C	HFT-A-3/16-RD
VG 95343 T05 A 005E	HFT-A-3/16-YE
VG 95343 T05 A 005F	HFT-A-3/16-GN
VG 95343 T05 A 005G	HFT-A-3/16-BU
VG 95343 T05 A 005H	HFT-A-3/16-VT
VG 95343 T05 A 005K	HFT-A-3/16-GY
VG 95343 T05 A 005L	HFT-A-3/16-WH
VG 95343 T05 A 005N	HFT-A-3/16-GNYE
VG 95343 T05 A 006A	HFT-A-1/4-BK
VG 95343 T05 A 006B	HFT-A-1/4-BN
VG 95343 T05 A 006C	HFT-A-1/4-RD
VG 95343 T05 A 006E	HFT-A-1/4-YE
VG 95343 T05 A 006F	HFT-A-1/4-GN
VG 95343 T05 A 006G	HFT-A-1/4-BU
VG 95343 T05 A 006H	HFT-A-1/4-VT
VG 95343 T05 A 006K	HFT-A-1/4-GY
VG 95343 T05 A 006L	HFT-A-1/4-WH
VG 95343 T05 A 006N	HFT-A-1/4-GNYE
VG 95343 T05 A 007A	HFT-A-3/8-BK
VG 95343 T05 A 007B	HFT-A-3/8-BN
VG 95343 T05 A 007C	HFT-A-3/8-RD
VG 95343 T05 A 007E	HFT-A-3/8-YE
VG 95343 T05 A 007F	HFT-A-3/8-GN
VG 95343 T05 A 007G	HFT-A-3/8-BU
VG 95343 T05 A 007H	HFT-A-3/8-VT
VG 95343 T05 A 007K	HFT-A-3/8-GY
VG 95343 T05 A 007L	HFT-A-3/8-WH
VG 95343 T05 A 007N	HFT-A-3/8-GNYE
VG 95343 T05 A 008A	HFT-A-1/2-BK
VG 95343 T05 A 008B	HFT-A-1/2-BN
VG 95343 T05 A 008C	HFT-A-1/2-RD
VG 95343 T05 A 008E	HFT-A-1/2-YE
VG 95343 T05 A 008F	HFT-A-1/2-GN
VG 95343 T05 A 008G	HFT-A-1/2-BU
VG 95343 T05 A 008H	HFT-A-1/2-VT
VG 95343 T05 A 008K	HFT-A-1/2-GY
VG 95343 T05 A 008L	HFT-A-1/2-WH
VG 95343 T05 A 008N	HFT-A-1/2-GNYE
VG 95343 T05 A 009A	HFT-A-3/4-BK
VG 95343 T05 A 009B	HFT-A-3/4-BN
VG 95343 T05 A 009C	HFT-A-3/4-RD
VG 95343 T05 A 009E	HFT-A-3/4-YE
VG 95343 T05 A 009F	HFT-A-3/4-GN
VG 95343 T05 A 009G	HFT-A-3/4-BU
VG 95343 T05 A 009H	HFT-A-3/4-VT
VG 95343 T05 A 009K	HFT-A-3/4-GY
VG 95343 T05 A 009L	HFT-A-3/4-WH
VG 95343 T05 A 009N	HFT-A-3/4-GNYE
VG 95343 T05 A 010A	HFT-A-1-BK
VG 95343 T05 A 010B	HFT-A-1-BN
VG 95343 T05 A 010C	HFT-A-1-RD
VG 95343 T05 A 010E	HFT-A-1-YE
VG 95343 T05 A 010F	HFT-A-1-GN
VG 95343 T05 A 010G	HFT-A-1-BU
VG 95343 T05 A 010H	HFT-A-1-VT
VG 95343 T05 A 010K	HFT-A-1-GY
VG 95343 T05 A 010L	HFT-A-1-WH
VG 95343 T05 A 010N	HFT-A-1-GNYE
VG 95343 T05 A 011A	HFT-A-1.1/2-BK
VG 95343 T05 A 011B	HFT-A-1.1/2-BN
VG 95343 T05 A 011C	HFT-A-1.1/2-RD
VG 95343 T05 A 011E	HFT-A-1.1/2-YE
VG 95343 T05 A 011F	HFT-A-1.1/2-GN
VG 95343 T05 A 011G	HFT-A-1.1/2-BU
VG 95343 T05 A 011H	HFT-A-1.1/2-VT
VG 95343 T05 A 011K	HFT-A-1.1/2-GY
VG 95343 T05 A 011L	HFT-A-1.1/2-WH
VG 95343 T05 A 011N	HFT-A-1.1/2-GNYE
VG 95343 T05 A 012A	HFT-A-2-BK
VG 95343 T05 A 012B	HFT-A-2-BN
VG 95343 T05 A 012C	HFT-A-2-RD
VG 95343 T05 A 012E	HFT-A-2-YE
VG 95343 T05 A 012F	HFT-A-2-GN
VG 95343 T05 A 012G	HFT-A-2-BU
VG 95343 T05 A 012H	HFT-A-2-VT
VG 95343 T05 A 012K	HFT-A-2-GY
VG 95343 T05 A 012L	HFT-A-2-WH
VG 95343 T05 A 013A	HFT-A-3-BK
VG 95343 T05 A 013B	HFT-A-3-BN
VG 95343 T05 A 013C	HFT-A-3-RD
VG 95343 T05 A 013E	HFT-A-3-YE
VG 95343 T05 A 013F	HFT-A-3-GN
VG 95343 T05 A 013G	HFT-A-3-BU
VG 95343 T05 A 013H	HFT-A-3-VT
VG 95343 T05 A 013K	HFT-A-3-GY
VG 95343 T05 A 013L	HFT-A-3-WH
VG 95343 T05 A 014A	HFT-A-4-BK
VG 95343 T05 A 014B	HFT-A-4-BN
VG 95343 T05 A 014C	HFT-A-4-RD
VG 95343 T05 A 014E	HFT-A-4-YE
VG 95343 T05 A 014F	HFT-A-4-GN
VG 95343 T05 A 014G	HFT-A-4-BU
VG 95343 T05 A 014H	HFT-A-4-VT
VG 95343 T05 A 014K	HFT-A-4-GY
VG 95343 T05 A 014L	HFT-A-4-WH
VG 95343 T05 A 019A	HFT-333-1.5/0.5-BK
VG 95343 T05 A 019C	HFT-333-1.5/0.5-RD
VG 95343 T05 A 019E	HFT-333-1.5/0.5-YE
VG 95343 T05 A 019G	HFT-333-1.5/0.5-BU
VG 95343 T05 A 019L	HFT-333-1.5/0.5-WH
VG 95343 T05 A 020A	HFT-333-3/1-BK
VG 95343 T05 A 020C	HFT-333-3/1-RD
VG 95343 T05 A 020E	HFT-333-3/1-YE
VG 95343 T05 A 020G	HFT-333-3/1-BU
VG 95343 T05 A 020L	HFT-333-3/1-WH
VG 95343 T05 A 021A	HFT-333-6/2-BK
VG 95343 T05 A 021C	HFT-333-6/2-RD
VG 95343 T05 A 021E	HFT-333-6/2-YE
VG 95343 T05 A 021G	HFT-333-6/2-BU
VG 95343 T05 A 021L	HFT-333-6/2-WH
VG 95343 T05 A 022A	HFT-333-9/3-BK
VG 95343 T05 A 022C	HFT-333-9/3-RD
VG 95343 T05 A 022E	HFT-333-9/3-YE
VG 95343 T05 A 022G	HFT-333-9/3-BU
VG 95343 T05 A 022L	HFT-333-9/3-WH
VG 95343 T05 A 023A	HFT-333-12/4-BK
VG 95343 T05 A 023C	HFT-333-12/4-RD
VG 95343 T05 A 023E	HFT-333-12/4-YE
VG 95343 T05 A 023G	HFT-333-12/4-BU
VG 95343 T05 A 023L	HFT-333-12/4-WH
VG 95343 T05 A 024A	HFT-333-18/6-BK
VG 95343 T05 A 024C	HFT-333-18/6-RD
VG 95343 T05 A 024L	HFT-333-18/6-YE
VG 95343 T05 A 024G	HFT-333-18/6-BU
VG 95343 T05 A 024L	HFT-333-18/6-WH
VG 95343 T05 A 025A	HFT-333-24/8-BK
VG 95343 T05 A 025C	HFT-333-24/8-RD
VG 95343 T05 A 025E	HFT-333-24/8-YE
VG 95343 T05 A 025G	HFT-333-24/8-BU
VG 95343 T05 A 025L	HFT-333-24/8-WH
VG 95343 T05 A 026A	HFT-333-39/13-BK
VG 95343 T05 A 026C	HFT-333-39/13-RD
VG 95343 T05 A 026E	HFT-333-39/13-YE
VG 95343 T05 A 026G	HFT-333-39/13-BU
VG 95343 T05 A 026L	HFT-333-39/13-WH
VG 95343 T05 B 001M	HFT-B-3/64-CL
VG 95343 T05 B 002M	HFT-B-1/16-CL
VG 95343 T05 B 003M	HFT-B-3/32-CL
VG 95343 T05 B 004M	HFT-B-1/8-CL
VG 95343 T05 B 005M	HFT-B-3/16-CL
VG 95343 T05 B 006M	HFT-B-1/4-CL
VG 95343 T05 B 007M	HFT-B-3/8-CL
VG 95343 T05 B 008M	HFT-B-1/2-CL
VG 95343 T05 B 009M	HFT-B-3/4-CL
VG 95343 T05 B 010M	HFT-B-1-CL
VG 95343 T05 B 011M	HFT-B-1.1/2-CL
VG 95343 T05 B 012M	HFT-B-2-CL
VG 95343 T05 B 013M	HFT-B-3-CL
VG 95343 T05 B 014M	HFT-B-4-CL
VG 95343 T05 D 001A	PST-H-1/8-BK

Description VG-Norm	Description HellermannTyton
VG 95343 T05 D 002A	PST-H-3/16-BK
VG 95343 T05 D 003A	PST-H-1/4-BK
VG 95343 T05 D 004A	PST-H-3/8-BK
VG 95343 T05 D 005A	PST-H-1/2-BK
VG 95343 T05 D 006A	PST-H-3/4-BK
VG 95343 T05 D 007A	PST-H-1-BK
VG 95343 T05 D 008A	PST-H-1.1/2-BK
VG 95343 T05 D 009A	PST-H-2-BK
VG 95343 T05 D 010A	PST-H-3-BK
VG 95343 T05 D 011A	PST-H-4-BK
VG 95343 T05 D 012A	PST-HT-3/32-BK
VG 95343 T05 D 013A	PST-HT-1/8-BK
VG 95343 T05 D 014A	PST-HT-3/16-BK
VG 95343 T05 D 015A	PST-HT-1/4-BK
VG 95343 T05 D 016A	PST-HT-3/8-BK
VG 95343 T05 D 017A	PST-HT-1/2-BK
VG 95343 T05 D 018A	PST-HT-3/4-BK
VG 95343 T05 D 019A	PST-HT-1-BK
VG 95343 T05 D 020A	PST-HT-1.1/2-BK
VG 95343 T05 D 021A	PST-HT-1.1/4-BK
VG 95343 T05 D 022A	PST-HT-2-BK
VG 95343 T05 E 001A	VITON-E-1/8-BK
VG 95343 T05 E 002A	VITON-E-3/16-BK
VG 95343 T05 E 003A	VITON-E-1/4-BK
VG 95343 T05 E 004A	VITON-E-3/8-BK
VG 95343 T05 E 005A	VITON-E-1/2-BK
VG 95343 T05 E 006A	VITON-E-3/4-BK
VG 95343 T05 E 007A	VITON-E-1-BK
VG 95343 T05 E 008A	VITON-E-1.1/2-BK
VG 95343 T05 E 009A	VITON-E-2-BK
VG 95343 T05 F 001M	KYNAR-3/64-CL
VG 95343 T05 F 002M	KYNAR-1/16-CL
VG 95343 T05 F 003M	KYNAR-3/32-CL
VG 95343 T05 F 004M	KYNAR-1/8-CL
VG 95343 T05 F 005M	KYNAR-3/16-CL
VG 95343 T05 F 006M	KYNAR-1/4-CL
VG 95343 T05 F 007M	KYNAR-3/8-CL
VG 95343 T05 F 008M	KYNAR-1/2-CL
VG 95343 T05 F 009M	KYNAR-3/4-CL
VG 95343 T05 F 010M	KYNAR-1-CL
VG 95343 T06 A 001 A	152-41-G
VG 95343 T06 A 002 A	153-41-G
VG 95343 T06 A 003 A	154-41-G
VG 95343 T06 A 004 A	155-41-G
VG 95343 T06 A 005 A	156-41-G
VG 95343 T06 A 006 A	157-41-G
VG 95343 T06 A 007 A	158-41-G
VG 95343 T06 A 008 A	159-41-G
VG 95343 T06 A 009 A	160-41-G
VG 95343 T06 A 010 A	199-4-G
VG 95343 T06 B 001 A	152-42-G
VG 95343 T06 B 002 A	153-42-G
VG 95343 T06 B 003 A	154-42-G
VG 95343 T06 B 004 A	155-42-G
VG 95343 T06 B 005 A	156-42-G
VG 95343 T06 B 006 A	157-42-G
VG 95343 T06 B 007 A	158-42-G
VG 95343 T06 B 008 A	159-42-G
VG 95343 T06 B 009 A	160-42-G
VG 95343 T06 C 001 A	157-43-G
VG 95343 T06 C 002 A	158-43-G
VG 95343 T06 C 003 A	159-43-G
VG 95343 T06 C 004 A	160-43-G

Description VG-Norm	Description HellermannTyton
VG 95343 T06 D 001 A	129-1-G
VG 95343 T06 D 002 A	130-1-G
VG 95343 T06 D 003 A	131-1-G
VG 95343 T06 D 004 A	132-1-G
VG 95343 T06 D 005 A	133-1-G
VG 95343 T06 D 006 A	134-1-G
VG 95343 T06 D 007 A	135-1-G
VG 95343 T06 D 008 A	136-1-G
VG 95343 T06 D 009 A	138-1-G
VG 95343 T06 D 011 A	176-1-G
VG 95343 T06 D 012 A	177-1-G
VG 95343 T06 D 013 A	178-1-G
VG 95343 T06 D 014 A	179-1-G
VG 95343 T06 E 001 A	1152-4-G
VG 95343 T06 E 002 A	1154-4-G
VG 95343 T06 E 003 A	1155-4-G
VG 95343 T06 E 004 A	1156-4-G
VG 95343 T06 E 005 A	1157-4-G
VG 95343 T06 E 006 A	1158-4-G
VG 95343 T06 E 007 A	1159-4-G
VG 95343 T06 E 008 A	1160-4-G
VG 95343 T06 F 001 A	1121-1-G
VG 95343 T06 F 002 A	1122-1-G
VG 95343 T06 F 003 A	1123-1-G
VG 95343 T06 F 004 A	1124-1-G
VG 95343 T06 F 005 A	1125-1-G
VG 95343 T06 F 006 A	1126-1-G
VG 95343 T06 F 007 A	1127-1-G
VG 95343 T06 F 008 A	1128-1-G
VG 95343 T06 F 009 A	1129-1-G
VG 95343 T06 F 010 A	1141-1-G
VG 95343 T06 F 011 A	1133-1-G
VG 95343 T06 F 012 A	1134-1-G
VG 95343 T06 F 013 A	1135-1-G
VG 95343 T06 F 014 A	1136-1-G
VG 95343 T06 J 001 A	1111-1-G
VG 95343 T06 J 002 A	1112-1-G
VG 95343 T06 J 003 A	1113-1-G
VG 95343 T06 J 004 A	1114-1-G
VG 95343 T06 J 006 A	1116-1-G
VG 95343 T06 J 007 A	1117-1-G
VG 95343 T06 J 008 A	1118-1-G
VG 95343 T06 J 009 A	1119-1-G
VG 95343 T06 K 001 A	1505-1-G
VG 95343 T06 K 002 A	1506-1-G
VG 95343 T06 K 003 A	1507-1-G
VG 95343 T06 K 004 A	1501-1-G
VG 95343 T06 K 005 A	1502-2-G
VG 95343 T06 K 006 A	1502-2-G
VG 95343 T06 K 007 A	1506-2-G
VG 95343 T06 K 008 A	1507-2-G
VG 95343 T06 K 009 A	1501-2-G
VG 95343 T06 K 010 A	1502-1-G
VG 95343 T06 L 001 A	2101-1-G
VG 95343 T06 L 002 A	2102-1-G
VG 95343 T06 L 003 A	2103-1-G
VG 95343 T06 L 004 A	2104-1-G
VG 95343 T06 L 005 A	2105-1-G
VG 95343 T06 L 006 A	2101-2-G
VG 95343 T06 L 007 A	2102-2-G
VG 95343 T06 L 008 A	2103-2-G
VG 95343 T06 L 009 A	2105-2-G

Description VG-Norm	Description HellermannTyton
VG 95343 T08 A 001 A	1203-1-G
VG 95343 T08 A 002 A	1209-1-G
VG 95343 T08 A 007 A	1201-1-G
VG 95343 T08 A 009 A	1206-1-G
VG 95343 T08 A 010 A	1202-1-G
VG 95343 T08 A 011 A	1207-1-G
VG 95343 T08 A 016 A	1204-1-G
VG 95343 T08 A 017 A	1216-1-G
VG 95343 T08 B 001 A	1301-1-G
VG 95343 T08 B 002 A	1303-1-G
VG 95343 T08 B 003 A	1311-1-G
VG 95343 T08 B 004 A	1302-1-G
VG 95343 T08 B 005 A	1304-1-G
VG 95343 T08 B 006 A	1305-1-G

Description VG-Norm	Description HellermannTyton
VG 95343 T08 B 007 A	1312-1-G
VG 95343 T08 B 008 A	1316-1-G
VG 95343 T08 B 009 A	1313-1-G
VG 95343 T08 B 010 A	1306-1-G
VG 95343 T08 B 011 A	1307-1-G
VG 95343 T08 B 012 A	1308-1-G
VG 95343 T08 C 001 A	206-1-G
VG 95343 T08 C 002 A	203-1-G
VG 95343 T08 C 003 A	204-1-G
VG 95343 T08 C 004 A	211-1-G
VG 95343 T08 C 005 A	212-1-G
VG 95343 T08 D 001 A	306-1-G
VG 95343 T08 D 002 A	304-1-G
VG 95343 T08 D 003 A	310-1-G
VG 95343 T08 D 004 A	311-1-G
VG 95343 T08 E 002 A	411-1-G
VG 95343 T08 E 004 A	403-1-G
VG 95343 T08 E 005 A	413-1-G
VG 95343 T10 A 001 A	1612-1-G
VG 95343 T10 A 002 A	1613-1-G
VG 95343 T10 A 003 A	1614-1-G
VG 95343 T10 A 004 A	1615-1-G
VG 95343 T10 A 005 A	1616-1-G
VG 95343 T15 A 001 A	V 9500
VG 95343 T15 A 002 B	V9500 B
VG 95343 T15 A	V9500 P
VG 95343 T15 DA	P9500
VG 95343 T15 MA	M9500
VG 95343 T18 A 001 A	152-41-GW24
VG 95343 T18 A 002 A	153-41-GW24
VG 95343 T18 A 003 A	154-41-GW24
VG 95343 T18 A 004 A	155-41-GW24
VG 95343 T18 A 005 A	156-41-GW24
VG 95343 T18 A 006 A	157-41-GW24
VG 95343 T18 A 007 A	158-41-GW24
VG 95343 T18 A 008 A	159-41-GW24
VG 95343 T18 A 009 A	160-41-GW24
VG 95343 T18 A 010 A	199-41-GW24
VG 95343 T18 E 001 A	1505-1-GW24
VG 95343 T18 E 002 A	1506-1-GW24
VG 95343 T18 E 003 A	1507-1-GW24
VG 95343 T18 E 004 A	1501-1-GW24
VG 95343 T18 E 005 A	1502-2-GW24
VG 95343 T18 E 006 A	1505-2-GW24
VG 95343 T18 E 007 A	1506-2-GW24
VG 95343 T18 E 008 A	1507-2-GW24
VG 95343 T18 E 009 A	1501-2-GW24
VG 95343 T18 E 010 A	1502-1-GW24
VG 95343 T18 B 001 A	152-42-GW24
VG 95343 T18 B 002 A	153-42-GW24
VG 95343 T18 B 003 A	154-42-GW24
VG 95343 T18 B 004 A	155-42-GW24
VG 95343 T18 B 005 A	156-42-GW24
VG 95343 T18 B 006 A	157-42-GW24
VG 95343 T18 B 007 A	158-42-GW24
VG 95343 T18 B 008 A	159-42-GW24
VG 95343 T18 B 009 A	160-42-GW24
VG 95343 T18 C 001 A	157-43-GW24

Description VG-Norm	Description HellermannTyton
VG 95343 T18 C 002 A	158-43-GW24
VG 95343 T18 C 003 A	159-43-GW24
VG 95343 T18 C 004 A	160-43-GW24
VG 95343 T18 D 001 A	1152-4-GW24
VG 95343 T18 D 002 A	1154-4-GW24
VG 95343 T18 D 003 A	1155-4-GW24
VG 95343 T18 D 004 A	1156-4-GW24
VG 95343 T18 D 005 A	1157-4-GW24
VG 95343 T18 D 006 A	1158-4-GW24
VG 95343 T18 D 007 A	1159-4-GW24
VG 95343 T18 D 008 A	1160-4-GW24
VG 95343 T18 G 001 A	2101-1-GW24
VG 95343 T18 G 003 A	2102-1-GW24
VG 95343 T18 G 005 A	2103-1-GW24
VG 95343 T18 G 006 A	2104-1-GW24
VG 95343 T18 G 007 A	2105-1-GW24
VG 95343 T18 G 008 A	2101-2-GW24
VG 95343 T18 G 010 A	2102-2-GW24
VG 95343 T18 G 012 A	2103-2-GW24
VG 95343 T18 G 014 A	2105-2-GW24
VG 95343 T18 H 001 A	1133-2-GW24
VG 95343 T18 H 002 A	1133-1-GW24
VG 95343 T19 A 001 A	1203-1-GW24
VG 95343 T19 A 002 A	1209-1-GW24
VG 95343 T19 A 003 A	1214-1-GW24
VG 95343 T19 A 004 A	1210-1-GW24
VG 95343 T19 A 006 A	1212-1-GW24
VG 95343 T19 A 007 A	1201-1-GW24
VG 95343 T19 A 008 A	1213-1-GW24
VG 95343 T19 A 009 A	1206-1-GW24
VG 95343 T19 A 010 A	1202-1-GW24
VG 95343 T19 A 011 A	1207-1-GW24
VG 95343 T19 A 012 A	1208-1-GW24
VG 95343 T19 A 016 A	1204-1-GW24
VG 95343 T19 A 017 A	1216-1-GW24
VG 95343 T19 A 018 A	1220-1-GW24
VG 95343 T19 E 002 A	411-1-GW24
VG 95343 T19 E 003 A	412-1-GW24
VG 95343 T19 E 004 A	403-1-GW24
VG 95343 T19 E 005 A	413-1-GW24
VG 95343 T19 E 009 A	414-1-GW24
VG 95343 T19 B 001 A	1301-1-GW24
VG 95343 T19 B 002 A	1303-1-GW24
VG 95343 T19 B 003 A	1311-1-GW24
VG 95343 T19 B 004 A	1302-1-GW24
VG 95343 T19 B 006 A	1305-1-GW24
VG 95343 T19 B 007 A	1312-1-GW24
VG 95343 T19 B 008 A	1316-1-GW24
VG 95343 T19 B 009 A	1313-1-GW24
VG 95343 T19 B 010 A	1306-1-GW24
VG 95343 T19 B 011 A	1307-1-GW24
VG 95343 T19 B 012 A	1308-1-GW24
VG 95343 T19 C 001 A	206-1-GW24
VG 95343 T19 C 002 A	203-1-GW24
VG 95343 T19 C 003 A	204-1-GW24
VG 95343 T19 C 004 A	211-1-GW24
VG 95343 T19 C 005 A	212-1-GW24
VG 95343 T19 D 001 A	306-1-GW24
VG 95343 T19 D 002 A	304-1-GW24
VG 95343 T19 D 003 A	310-1-GW24
VG 95343 T19 D 004 A	311-1-GW24
VG 95343 T19 D 005 A	312-1-GW24
VG 95343 T29 A 001 A	152-61-HW21

Description VG-Norm	Description HellermannTyton
VG 95343 T29 A 002 A	153-61-HW21
VG 95343 T29 A 003 A	154-61-HW21
VG 95343 T29 A 004 A	155-61-HW21
VG 95343 T29 A 005 A	156-61-HW21
VG 95343 T29 A 006 A	157-61-HW21
VG 95343 T29 B 001 A	152-62-HW21
VG 95343 T29 B 002 A	153-62-HW21
VG 95343 T29 B 003 A	154-62-HW21
VG 95343 T29 B 004 A	155-62-HW21
VG 95343 T29 B 005 A	156-62-HW21
VG 95343 T29 B 006 A	157-62-HW21
VG 95343 T29 B 007 A	158-62-HW21
VG 95343 T29 C 001 A	157-63-HW21
VG 95343 T29 C 002 A	158-63-HW21
VG 95343 T29 D 001 A	1152-6-HW21
VG 95343 T29 D 002 A	1154-6-HW21
VG 95343 T29 D 003 A	1155-6-HW21
VG 95343 T29 D 004 A	1156-6-HW21
VG 95343 T29 D 005 A	1157-6-HW21
VG 95343 T29 D 006 A	1158-6-HW21
VG 95343 T30 A 001 A	1203-1-HW21
VG 95343 T30 A 002 A	1209-1-HW21
VG 95343 T30 A 007 A	1201-1-HW21
VG 95343 T30 A 009 A	1206-1-HW21
VG 95343 T30 A 010 A	1202-1-HW21
VG 95343 T30 A 011 A	1207-1-HW21
VG 95343 T30 A 016 A	1204-1-HW21
VG 95343 T30 A 017 A	1216-1-HW21
VG 95343 T30 B 001 A	1301-1-HW21
VG 95343 T30 B 002 A	1303-1-HW21
VG 95343 T30 B 003 A	1311-1-HW21
VG 95343 T30 B 004 A	1302-1-HW21
VG 95343 T30 C 001 A	206-1-HW21
VG 95343 T30 C 002 A	203-1-HW21
VG 95343 T30 C 003 A	204-1-HW21
VG 95343 T30 C 004 A	211-1-HW21
VG 95343 T30 C 005 A	212-1-HW21
VG 95343 T30 D 001 A	306-1-HW21
VG 95343 T30 D 002 A	304-1-HW21
VG 95343 T30 D 003 A	310-1-HW21
VG 95343 T30 D 004 A	311-1-HW21

Standards for HellermannTyton Cable Protection

UL	Underwriters Laboratories (USA)	**cULus**	Underwriters Laboratories (Canada, USA)
LUL	London Underground (Great Britain)	**FIMKO**	Suomalainen testaus- ja sertifiointiyritys (Finland)
VG	German Defence Equipment Standard (Germany)	**DEMKO**	Suomalainen testaus- ja sertifiointiyritys (Finland)
CSA	Canadian Standards Association (Canada)	**NEMKO**	Danske Elektriske Materialekontrol (Denmark)
VDE	Verband der Elektrotechnik, Elektronik, Informationstechnik (Germany)	**SEMKO**	Sveriges Elektriska Materielkontroll (Sweden)
UL94	Flammability Rating (USA)	**KEMA KEUR**	KEMA Quality B.V (Netherlands)
MIL	Military Specification (USA)	**CEBEC**	Comité Electrotechnique Belgic (Belgium)
DEF STAN	Defence Standard (Great Britain)	**NF-F**	Norme Francaise du Matériel Ferroviaire (France)

	Standards		Mat.tests	
Type	**UL**	**NF F 16-101/16-102**	**UL94**	**DIN 54837 : 2007**
Heladuct HTC	●		V2	
Helagaine HEGPV0X, HEGPV0	●	●	V0	●
Helagaine HEGP, HEGPX		●	V2	
Helagaine HEGPA66		●	V2	●
Helawrap HWPA-V0		●	V0	

Standards for HellermannTyton Connectors

Type	**VDE**	**FIMKO**	**DEMKO**	**NEMKO**	**SEMKO**	**KEMA KEUR**	**cULus**	**CEBEC**
HelaCon Plus	●	●	●	●	●	●	●	
HelaCon Easy	●	●				●	●	●

Standards for HellermannTyton Identification Systems

	Standards						Mat.tests
Type	**UL**	**CSA**	**MIL**	**DEF STAN**	**LUL**	**VG**	**UL94**
WIC							V0*
IT Ties	●						
IT1 Plate						●	
Helatag Laser, Material 1101	●						
Helatag Laser, Material 1102	●						
Helatag Laser, Material 1103	●						
Helatag Laser, Material 1104	●						
Helatag Laser, Material 1105	●						
Helatag Thermotransfer, Material 321	●						
Helatag Thermotransfer, Material 951	●						
Helatag Thermotransfer, Material 1203	●						
Helatag Thermotransfer, Material 1204	●						
Helatag Thermotransfer, Material 1205	●						
Helatag Thermotransfer, Material 1206	●						
Helatag Thermotransfer, Material 1207	●						
TLFPT					RSE STD 013		
TCGT		●					
TULT	●	●					
TIPTAG					RSE STD 013		
TIPTAG VA			●				
ShrinkTrak	●		●	●			

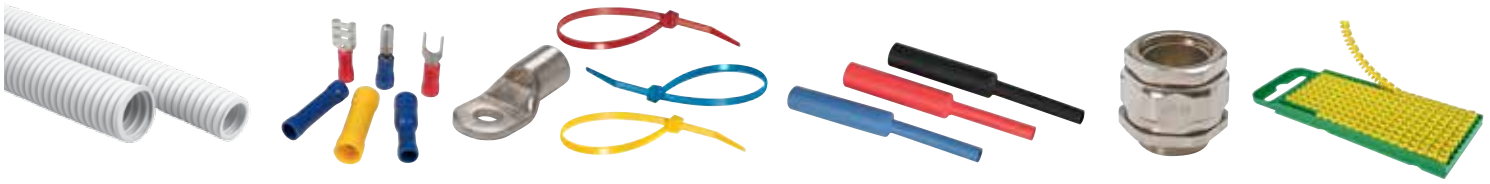
Standards for HellermannTyton Application Tooling

Type	**MIL**	**VG**
MK7 Application Tool for Cable Ties	MS 90387-1	VG 95387-105
MK9 Application Tool for Cable Ties	MS 90387-2	VG 95387-105



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Fax: (041) 453-0336

In the event that our landline number is not in operation please use the emergency numbers provided below:

082 824 5625 | 082 824 5626 | 082 824 5627 | 082 829 9643

These emergency numbers are only applicable to our Johannesburg office, and not countrywide.