

# HellermannTyton

## Catalogue: General Products 2022/2023



# Interesting Facts



**4 800 m<sup>2</sup>**

Total manufacturing area



**8 300m<sup>2</sup>**

Total Warehouse area



**9**

Number of independent production processes



**1 400 tons**

Annual volume of plastic raw material converted



**>800 million**

Annual volume of products produced



**22**

Number of injection moulding machines



**7**

Number of plastic extrusion machines



**4 tons**

Maximum mould handling capacity



**12**

Number of CNC machining centres



**6 500**

Number of stocked SKU's



**IATF**

Accredited

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# Company Profile



**+50 Years**  
Local manufacturer



**IATF**  
Accredited



**MANUFACTURING**

- Injection moulding
- Extrusion of tubing and flexible conduit
- Cable markers
- Custom automotive assemblies
- Electrical assemblies

**ENGINEERING AND TOOLMAKING**

- Design and manufacture plastic injection moulds
- Extrusion tooling
- Jigs and fixtures
- Custom plastic injection moulding

**WAREHOUSE AND DISTRIBUTION**

- Integrated electronic warehouse system management

**PRODUCT BASKET**

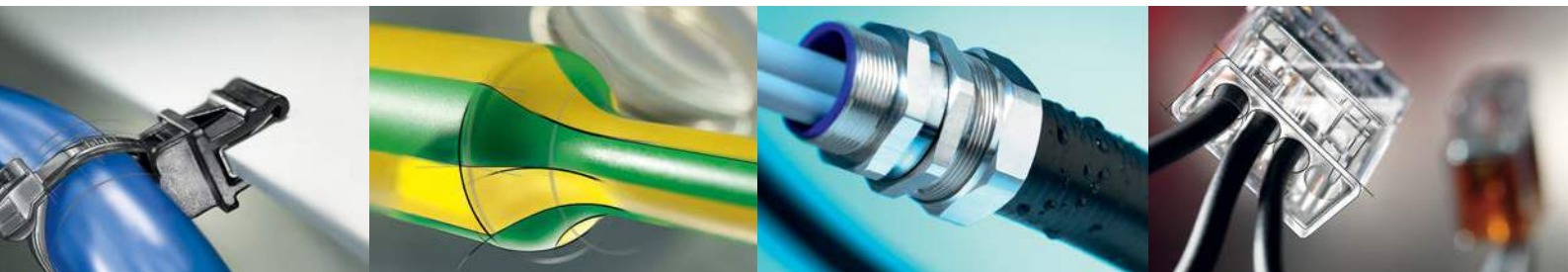
- Cable ties and fixing
- Cable bundling
- Cable identification
- Cable insulation and protection
- Electrical test instruments
- Electrician tools

**MARKETS**



**GLOBAL NETWORK**





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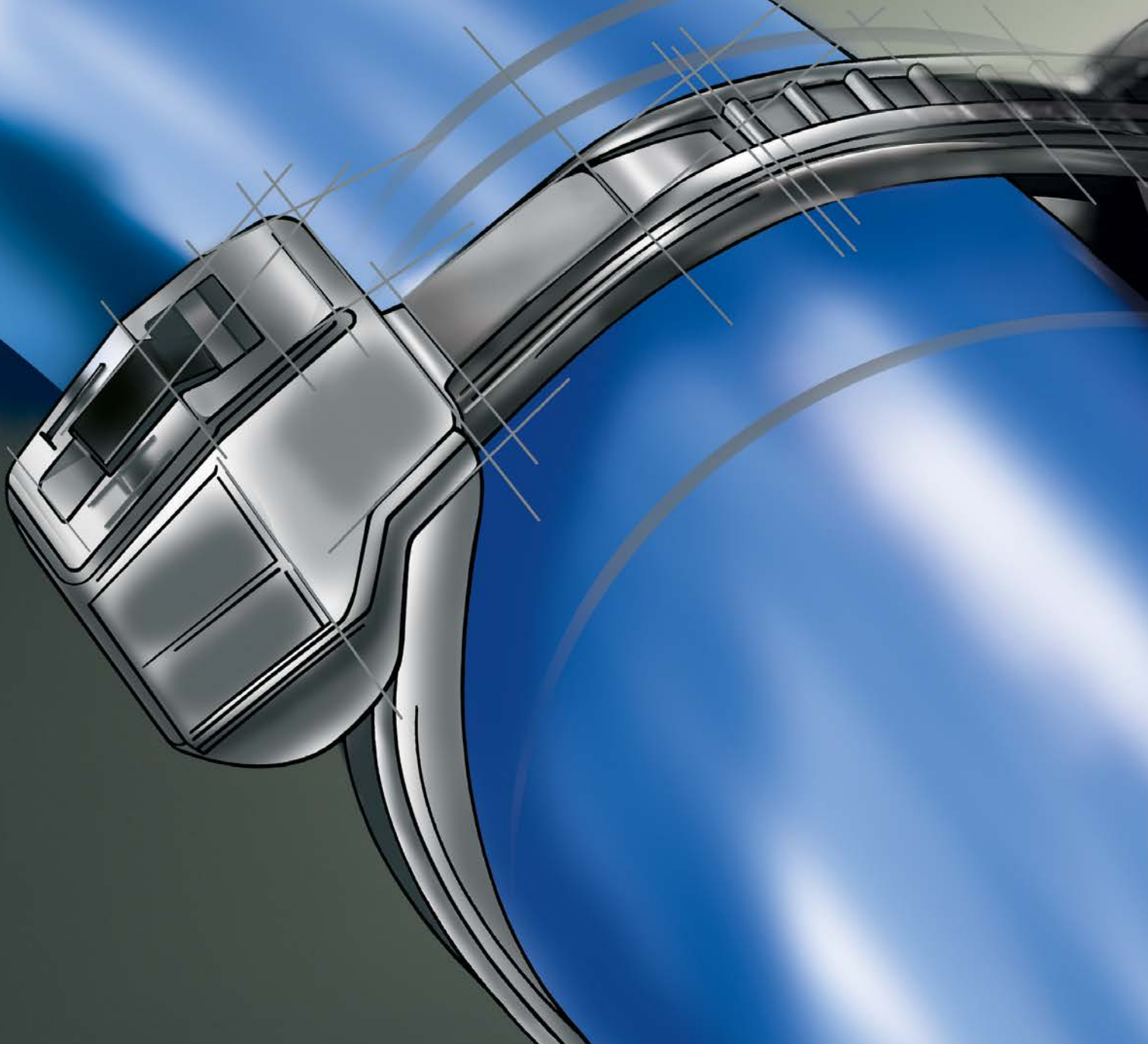
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Type	Abbreviations	Operating Temperature	Colour**	Flammability	Material Properties*	Material Specifications
Aluminium-alloy	AL	-40°C to +180°C	■		<ul style="list-style-type: none"> <li>Corrosion resistant</li> <li>Anti-magnetic</li> </ul>	RoHS
Chloroprene rubber	CR	-20°C to +80°C	■		<ul style="list-style-type: none"> <li>Weather-resistant</li> <li>High yield strength</li> </ul>	RoHS
Ethylene Tetrafluoroethylene	E/TFE	-80°C to +170°C	■	UL94 V0	<ul style="list-style-type: none"> <li>Resistance to radioactivity</li> <li>UV-resistant, not moisture sensitive</li> <li>Good chemical resistance to: acids, bases, oxidizing agents</li> </ul>	RoHS
Polyacetal	POM	-70°C to +90°C (+110°C (500h))	■	UL94 HB	<ul style="list-style-type: none"> <li>Limited brittleness sensitivity</li> <li>Flexible at low temperature</li> <li>Not moisture sensitive</li> <li>Robust on impact</li> </ul>	RoHS
Polyamide 11	PA11	-40°C to +85°C (+150°C (500h))	■	UL94 HB	<ul style="list-style-type: none"> <li>Bio-plastic, derived from vegetable oil</li> <li>Strong impact resistance at low temperature</li> <li>Very low moisture absorption</li> <li>Weather-resistant</li> <li>Good chemical resistance</li> </ul>	HF RoHS
Polyamide 12	PA12	-40°C to +85°C (+150°C (500h))	■	UL94 HB	<ul style="list-style-type: none"> <li>Good chemical resistance acids, bases, oxidizing agents</li> <li>UV-resistant</li> </ul>	HF RoHS
Polyamide 4.6	PA46	-40°C to +130°C (+150°C (500h), +195°C (500h))	■ ■	UL94 V2	<ul style="list-style-type: none"> <li>Resistance to high temperatures</li> <li>Very moisture sensitive</li> <li>Low smoke sensitive</li> </ul>	HF LHF RoHS
Polyamide 6	PA6	-40°C to +80°C	■	UL94 V2	<ul style="list-style-type: none"> <li>High yield strength</li> </ul>	RoHS
Polyamide 6 High impact modified	PA6HIR	-40°C to +80°C	■	UL94 HB	<ul style="list-style-type: none"> <li>Limited brittleness sensitivity</li> <li>Higher flexibility at low temperature</li> </ul>	RoHS
Polyamide 6.6	PA66	-40°C to +80°C, (+105°C, 500h)	■ ■ ■ ■ ■ ■ ■	UL94 V2	<ul style="list-style-type: none"> <li>High yield strength</li> </ul>	HF RoHS
Polyamide 6.6 Glass-fibre reinforced	PA66GF13, PA66GF15	-40°C to +105°C	■	UL94 HB	<ul style="list-style-type: none"> <li>Good resistance to: lubricants, vehicle fuel, salt water and many solvents</li> </ul>	HF RoHS
Polyamide 6.6 Heat and UV stabilised	PA66HSW	-40°C to +105°C	■	UL94 V2	<ul style="list-style-type: none"> <li>High yield strength</li> <li>Modified elevated max. temperature</li> <li>UV-resistant</li> </ul>	HF RoHS
Polyamide 6.6 Heat stabilised	PA66HS	-40°C to +105°C	■ ■	UL94 V2	<ul style="list-style-type: none"> <li>High yield strength</li> <li>Modified elevated max. temperature</li> </ul>	HF RoHS
Polyamide 6.6 High impact modified	PA66HIR	-40°C to +80°C (+105°C (500h))	■	UL94 HB	<ul style="list-style-type: none"> <li>Limited brittleness sensitivity</li> <li>Higher flexibility at low temperature</li> </ul>	RoHS
Polyamide 6.6 High impact modified, heat and UV stabilised	PA66HRHSW	-40°C to +110°C	■	UL94 HB	<ul style="list-style-type: none"> <li>Limited brittleness sensitivity</li> <li>Higher flexibility at low temperature</li> <li>Modified elevated max. temperature</li> <li>High yield strength, UV-resistant</li> </ul>	HF RoHS
Polyamide 6.6 High impact modified, heat stabilised	PA66HIRHS	-40°C to +105°C	■	UL94 HB	<ul style="list-style-type: none"> <li>Limited brittleness sensitivity</li> <li>Higher flexibility at low temperature</li> <li>Modified elevated max. temperature</li> </ul>	RoHS
Polyamide 6.6 High impact modified, scan black	PA66HIR(S)	-40°C to +80°C (+105°C (500h))	■	UL94 HB	<ul style="list-style-type: none"> <li>Limited brittleness sensitivity</li> <li>Higher flexibility at low temperature</li> </ul>	HF RoHS
Polyamide 6.6, UV-resistant	PA66W	-40°C to +85°C (+105°C (500h))	■	UL94 V2	<ul style="list-style-type: none"> <li>High yield strength</li> <li>UV-resistant</li> </ul>	HF RoHS

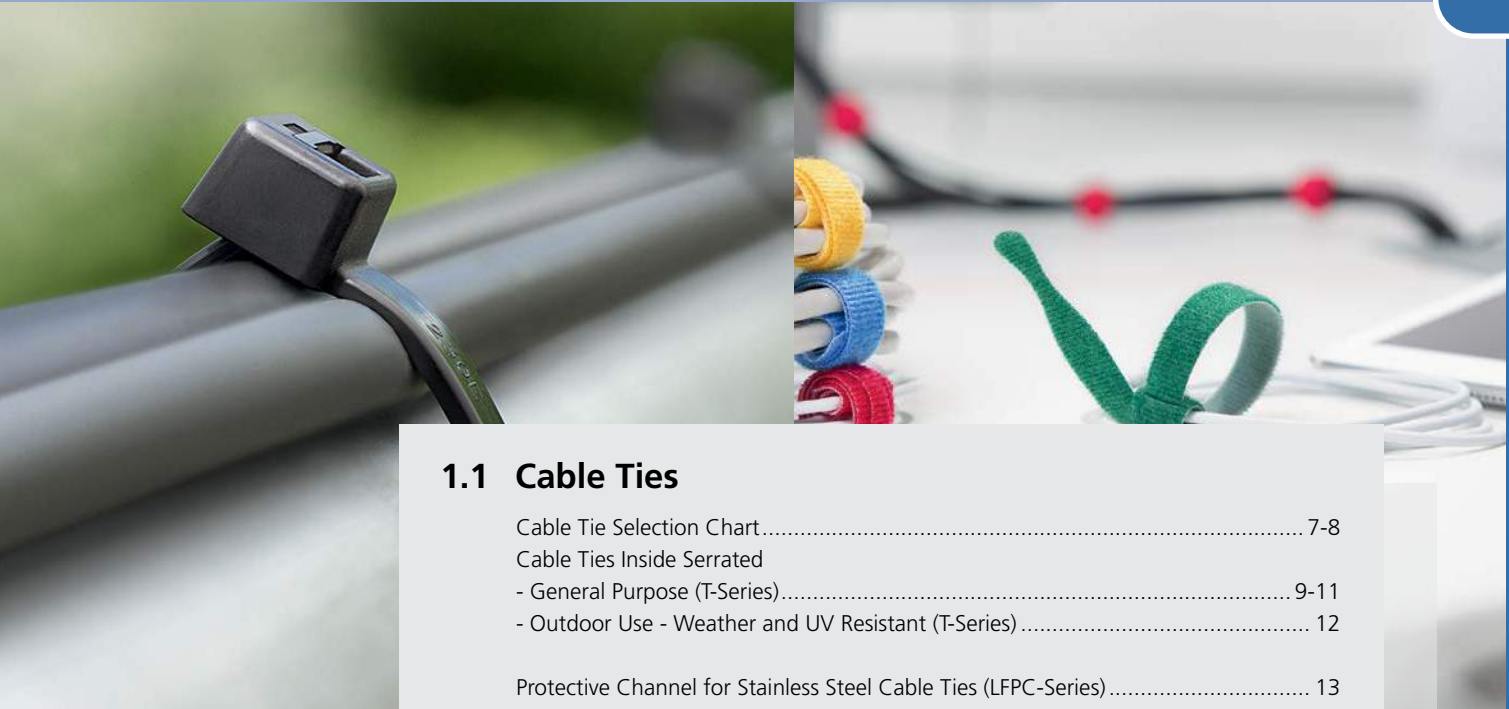


Type	Abbreviations	Operating Temperature	Colour**	Flammability	Properties*	Material Specifications
<b>Polyamide 6.6</b> with metal particles	PA66MP	-40°C to +85°C (+105°C (500 h))	■	UL94 HB	<ul style="list-style-type: none"> <li>High yield strength</li> <li>Metal and X-Ray detectable</li> </ul>	HF RoHS
<b>Polyamide 6.6</b> with metal particles	PA66MP+	-40°C to +85°C	■	Not flame retardant	<ul style="list-style-type: none"> <li>High yield strength</li> <li>Metal and X-Ray detectable</li> </ul>	HF RoHS
<b>Polyamide 6.6 VO</b>	PA66VO	-40°C to +85°C	□	UL94 VO	<ul style="list-style-type: none"> <li>High yield strength</li> <li>Low smoke emission</li> </ul>	HF LHF RoHS
<b>Polyester</b>	SP	-50°C to +150°C	■	Halogen free	<ul style="list-style-type: none"> <li>UV-resistant</li> <li>Good chemical resistance to: most acids, alkalis and oils</li> </ul>	HF LHF RoHS
<b>Polyetheretherketone</b>	PEEK	-40°C to +240°C	■	UL94 VO	<ul style="list-style-type: none"> <li>Resistance to radioactivity</li> <li>Not moisture sensitive</li> <li>Good chemical resistance to: acids, bases, oxidizing agents</li> </ul>	HF LHF RoHS
<b>Polyethylene</b>	PE	-40°C to +50°C	■	UL94 HB	<ul style="list-style-type: none"> <li>Low moisture absorption</li> <li>Good chemical oils resistance to: most acids, alcohol and oils</li> </ul>	HF RoHS
<b>Polyolefin</b>	PO	-40°C to +90°C	■	UL94 VO	<ul style="list-style-type: none"> <li>Low smoke emissions</li> </ul>	HF LHF RoHS
<b>Polypropylene</b>	PP	-40°C to +115°C	■	UL94 HB	<ul style="list-style-type: none"> <li>Floats in water</li> <li>Moderate yield strength</li> <li>Good chemical resistance to: organic acids</li> </ul>	HF RoHS
<b>Polypropylene, Ethylene-Propylene-Dien-Terpolymere-rubber</b> free of Nitrosamine	PP, EPDM	-40°C to +95°C	■	UL94 HB	<ul style="list-style-type: none"> <li>Good resistance to high temperatures</li> <li>Good chemical and abrasion resistance</li> </ul>	HF RoHS
<b>Polypropylene</b> with metal particles	PPMP	-40°C to +115°C	■	UL94 HB	<ul style="list-style-type: none"> <li>Floats in certain liquids</li> <li>Metal and X-Ray detectable</li> <li>Heat resistant</li> <li>Moderate yield strength</li> <li>Good chemical resistance</li> </ul>	HF RoHS
<b>Polypropylene</b> with metal particles	PPMP+	-40°C to +85°C	■	Not flame retardant	<ul style="list-style-type: none"> <li>Metal and X-Ray detectable</li> <li>Moderate yield strength</li> </ul>	HF RoHS
<b>Polyvinylchloride</b>	PVC	-40°C to +70°C	■	UL94 VO	<ul style="list-style-type: none"> <li>Low moisture absorption</li> <li>Good chemical resistance to: acids, ethanol and oil</li> </ul>	RoHS
<b>Stainless Steel, Stainless Steel</b>	SS304, SS316	-40°C to +105°C		Non-burning	<ul style="list-style-type: none"> <li>Corrosion resistant</li> <li>Antimagnetic</li> <li>Weather resistant</li> <li>Outstanding chemical resistance</li> </ul>	HF LHF RoHS
<b>Thermoplastic Polyurethane</b>	TPU	-40°C to +85°C	■	UL94 HB	<ul style="list-style-type: none"> <li>High elastic</li> <li>Good chemical resistance to: acids, bases and oxidizing agents</li> </ul>	HF RoHS

\*Above is a guide only

\*\*More colours available on request






## 1.1 Cable Ties








































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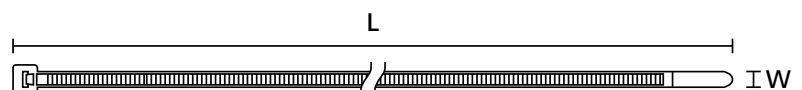


Type		Description	Material	Outdoor Application	Indoor Application	UV resistant	Weather resistant	Flame Retardant
T Series		General purpose, inside serrated #Black only	PA66	*	*	*		
T Series Outdoor		UV & weather resistant, inside serrated	PA66W	*		*	*	
Q-Ties		Integrated pre-locking function, open head, inside serration	PA66		*	*		
OS Series		UV stabilised, outside serrated	PA66W	*		*		
OS Series		Heat stabilised, outside serrated	PA66HS		*		*	*
OS Series		Low smoke emission, outside serrated	PA66VD		*			
OS Series		Curved head, high temperature, outside serrated	PA46		*			
RPE Series (E.R. D.F. approved)		Low profile, releasable, reusable, outside serrated	PA66HSW		*	*		
PE Series		Low profile, outside serrated	PA66HSW*, PA66*		*	*		
LPH Series		Low profile, outside serrated	PA66, PA66W		*	*		
RT Series		Releasable, reusable, inside serrated	PA66		*	*		
RELK Series		Releasable, reusable, inside serrated	PA66		*	*		
RLT Series		Releasable, reusable, inside serrated	PA66*, PA66W*, PA66HS*	*	*	*	*	
REL Series		Releasable, reusable, inside serrated	PA66, PA66W	*		*		
SRT Series		Releasable, reusable, without serration	TPU		*			
PEEK Ties		High temperature, outside serrated	PEEK		*			*
SpeedyTie®		Quick release	PA66		*	*		
KR Series, 1 Piece		Glass Fibre Pin, without serration	PA66, PA66W, PA66HS	*		*		
KR Series, Endless		Glass Fibre Pin, without serration	PA66HS, PA66W		*			
MCT (FDA, HACCP approved)		Detectable, Metal Content, inside serrated	PA66MP, PPMP+, PA66MP, PA66MP+					
MBT Range		Stainless steel, metal ball bearing	SS316	*		*	*	
MST		Punch-locking mechanism	SS304	*		*	*	
LFPC		Protective channel for stainless steel cable ties	PO	*	*	*	*	

#### \*\*Colour Abbreviation Table\*

BK   Black	BN   Brown	RD   Red	OG   Orange	YL   Yellow	GR   Green	BL   Blue	VT   Violet	PK   Pink	GY   Grey	WT   White	NT   Natural	BGE   Beige
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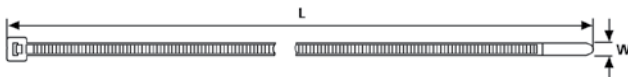
Heat Stabiliser	Length (mm)	Width (mm)		MAX Cable Bundle DIA (mm) Range	**Colour	Operating Temperature	Flammability	Material Specification	Industry
	100 to 535	2.5 to 13.2	80 to 1115	22 to 150	BK ■ BL ■ BN ■ GR ■ OG ■ PK ■ RD ■ VT ■ YL ■ WT ■	-40°C to +85°C	UL94 V2	HF ✓ RoHS ✓	Various
	83 to 535	2.3 to 13.2	80 to 1115	16 to 150	BK ■	-40°C to +85°C	UL94 V2	HF ✓ RoHS ✓	Various
*	105 to 520	2.6 to 7.7	80 to 530	24 to 145	BK ■ NT ■	-40°C to +85°C	UL94 V2	HF ✓ RoHS ✓	Various
*	150 & 200	4.6	225	35 & 50	BK ■	-40°C to +85°C	UL94 V2	HF ✓ RoHS ✓	 
*	100 to 384	2.5 to 4.6	80 to 225	20 to 110	BK ■ NT ■	-40°C to +105°C	UL94 V3	HF ✓ RoHS ✓	 
*	145	3.4	135	35	NT ■	-40°C to +85°C	UL94 V3	HF ✓ RoHS ✓ LFH ✓	 
	150 to 245	4.6	35 to 66	225	GY ■ NT ■	-40°C to +150°C	UL94 V3	HF ✓ RoHS ✓	  
*	180 to 400	9	330 to 445	42 to 146	BK ■	-40°C to +105°C	UL94 V2	HF ✓ RoHS ✓	Various
*	275 to 359	9	445	69 to 92	BK ■ BL ■ GN ■ RD ■ YL ■	-40°C to +105°C	UL94 V2	HF ✓ RoHS ✓	
	175 to 355	9	310 to 480	40 to 92	BK ■	-40°C to +85°C	UL94 V2	HF ✓ RoHS ✓	
	565.3 to 1030	12.7	1115	150 to 305	BK ■ NT ■	-40°C to +85°C	UL94 V2	HF ✓ RoHS ✓	   
	200 to 350	4.6	200	50 to 95	BK ■ NT ■	-40°C to +85°C	UL94 V2	HF ✓ RoHS ✓	   
*	340 to 770	7.6 to 8.9	535 to 670	90 to 225	BK ■ NT ■	-40°C to +85°C	UL94 V2	HF ✓ RoHS ✓	   
	100 to 250	6.5 to 7.6	150 to 200	21 to 68	BK ■ NT ■	-40°C to +85°C	UL94 V2	HF ✓ RoHS ✓	   
	180 to 580	7 to 28	57 to 360	45 to 150	BK ■	-40°C to +85°C	UL94 HB	HF ✓ RoHS ✓	 
	145	3.4	230	35	BGE ■	-55°C to +240°C	UL94 VD	HF ✓ RoHS ✓ LFH ✓	   
	750	13	888	210	YL ■	-40°C to +85°C	UL94 V2	HF ✓ RoHS ✓	Various
*	210 to 600	6.1 to 8	390 to 785	47 to 184	BK ■ NT ■	-40°C to +85°C	UL94 V4	HF ✓ RoHS ✓	 
	5000	8	785	N/A	BK ■ NT ■	-40°C to +85°C	UL94 V5	HF ✓ RoHS ✓	 
	390	2.5 to 7.6	85 to 380	22 to 110	BL ■ MST ■ MGN ■ RUS ■	-40°C to +85°C	UL94 HB	HF ✓ RoHS ✓	
	127 to 838	4.6 to 12.3	670 to 2225	25 to 254		-80°C to +538°C	Non-burning	HF ✓ RoHS ✓ LFH ✓	Various
	207 to 700	5.9 to 8.9	900 to 1500	50 to 205		-80°C to +538°C	Non-burning	HF ✓ RoHS ✓ LFH ✓	Various
	25 to 50m	7 to 16.3	N/A	N/A	BK ■	-40°C to +90°C	UL94 V0	HF ✓ RoHS ✓ LFH ✓	Various



### General Purpose Cable Ties

#### T-Series, PA66 (Black and Natural)

- Operating temperature -40°C to +85°C
- Flammability UL94 V2
- Inside serration for a strong hold onto bundles
- High tensile strength with low insertion force
- Easily installed either by hand or with a tensioning tool
- Made from 100% high quality plastic, allows for good recycling




















T18S - LK5



T-Series cable ties for almost any type of indoor or outdoor (black only) application

HF ✓ RoHS ✓

**i** Locally manufactured

Type	Width (W)	Length (L)	Bundle Ø max.		Material (p3)	Colour	Qty	Article-No.
T18RNT	2.5	100	22	80	PA66	Natural (NT) 	100	111-02074
T18RBK	2.5	100	22	80	PA66	Black (BK) 	100	111-02064
T30RNT	3.5	150	35	135	PA66	Natural (NT) 	100	111-02092
T30RBK	3.5	150	35	135	PA66	Black (BK) 	100	111-02066
T50RNT	4.6	200	50	225	PA66	Natural (NT) 	100	111-02109
T50RBK	4.6	200	50	225	PA66	Black (BK) 	100	111-02067
T50INT	4.6	300	85	225	PA66	Natural (NT) 	100	111-02157
T50IBK	4.6	300	85	225	PA66	Black (BK) 	100	111-02128
T50LNT	4.6	390	110	225	PA66	Natural (NT) 	100	111-02171
T50LBK	4.6	390	110	225	PA66	Black (BK) 	100	111-02132
T120SNT	7.6	278	55	535	PA66	Natural (NT) 	50	111-02146
T120SBK	7.6	278	55	535	PA66	Black (BK) 	50	111-02126
T120RNT	7.6	390	105	535	PA66	Natural (NT) 	50	111-02137
T120RBK	7.6	390	105	535	PA66	Black (BK) 	50	111-02120
LK5NT	13.2	535	150	1115	PA66	Natural (NT) 	50	111-60519
LK5BK	13.2	535	150	1115	PA66	Black (BK) 	50	111-02117

All dimensions are in mm. Subject to technical changes

#### Recommended Tools

Type				
	<b>TG008</b>	<b>MK10TEN</b>	<b>EVO7i</b>	<b>EV0CUT</b>
Page	57	57	57	57

### General Purpose Cable Ties

#### T-Series, PA66 (Colour)

- Operating temperature -40°C to +85°C
- Flammability UL94 V2
- Simple to insert due to bent tail
- Inside serration for a strong hold onto bundles
- Easily installed either by hand or with a tensioning tool
- Made from 100% high quality plastic, allows for good recycling



T18S - LK5







































T-Series cable ties for almost any type of indoor applications

HF ✓ RoHS ✓

**i** Locally manufactured

Type	Width (W)	Length (L)	Bundle Ø max.	N	Material (p3)	Colour	Qty	Article-No.
T18RBL	2.5	100	22	80	PA66	Blue (BL)	100	111-02070
T18RBN	2.5	100	22	80	PA66	Brown (BN)	100	111-02071
T18RGR	2.5	100	22	80	PA66	Green (GR)	100	111-02072
T18RGY	2.5	100	22	80	PA66	Grey (GY)	100	111-02073
T18ROR	2.5	100	22	80	PA66	Orange (OR)	100	111-02075
T18RPK	2.5	100	22	80	PA66	Pink (PK)	100	111-02076
T18RRD	2.5	100	22	80	PA66	Red (RD)	100	111-02077
T18RVT	2.5	100	22	80	PA66	Violet (VT)	100	111-02078
T18RYL	2.5	100	22	80	PA66	Yellow (YL)	100	111-02079
T30RBL	3.5	150	35	135	PA66	Blue (BL)	100	111-02088
T30RBN	3.5	150	35	135	PA66	Brown (BN)	100	111-02089
T30RGR	3.5	150	35	135	PA66	Green (GR)	100	111-02090
T30RGY	3.5	150	35	135	PA66	Grey (GY)	100	111-02091
T30ROR	3.5	150	35	135	PA66	Orange (OR)	100	111-02093
T30RPK	3.5	150	35	135	PA66	Pink (PK)	100	111-02094
T30RRD	3.5	150	35	135	PA66	Red (RD)	100	111-02095
T30RVT	3.5	150	35	135	PA66	Violet (VT)	100	111-02096
T30RWT	3.5	150	35	135	PA66	White (WT)	100	911-01946
T30RYL	3.5	150	35	135	PA66	Yellow (YL)	100	111-02097
T50RBL	4.6	200	35	135	PA66	Blue (BL)	100	111-02098
T50RBN	4.6	200	35	135	PA66	Brown (BN)	100	111-02100
T50RGR	4.6	200	35	135	PA66	Green (GR)	100	111-02106
T50RGY	4.6	200	35	135	PA66	Grey (GY)	100	111-02107
T50ROR	4.6	200	35	135	PA66	Orange (OR)	100	111-02111
T50RPK	4.6	200	35	135	PA66	Pink (PK)	100	111-02112
T50RRD	4.6	200	35	135	PA66	Red (RD)	100	111-02113
T50RVT	4.6	200	35	135	PA66	Violet (VT)	100	111-02114
T50RWT	4.6	200	35	135	PA66	White (WT)	100	111-02115
T50RYL	4.6	200	35	135	PA66	Yellow (YL)	100	111-02116

**T-Series, PA66 (Colour)**

Type	Width (W)	Length (L)	Bundle Ø max.	N	Material (p3)	Colour	Qty	Article-No.
T50IBL	4.6	300	85	225	PA66	Blue (BL) 	100	111-02152
T50IBN	4.6	300	85	225	PA66	Brown (BN) 	100	111-02153
T50IGR	4.6	300	85	225	PA66	Green (GR) 	100	111-02154
T50IGY	4.6	300	85	225	PA66	Grey (GY) 	100	111-02155
T50IOR	4.6	300	85	225	PA66	Orange (OR) 	100	111-02158
T50IRD	4.6	300	85	225	PA66	Red (RD) 	100	111-02161
T50IVT	4.6	300	85	225	PA66	Violet (VT) 	100	111-02163
T50IYL	4.6	300	85	225	PA66	Yellow (YL) 	100	111-02164
T50LBL	4.6	390	110	225	PA66	Blue (BL) 	100	111-02165
T50LBN	4.6	390	110	225	PA66	Brown (BN) 	100	111-02166
T50LGR	4.6	390	110	225	PA66	Green (GR) 	100	111-02167
T50LGY	4.6	390	110	225	PA66	Grey (GY) 	100	111-02168
T50LOR	4.6	390	110	225	PA66	Orange (OR) 	100	111-02172
T50LRD	4.6	390	110	225	PA66	Red (RD) 	100	111-02173
T50LVT	4.6	390	110	225	PA66	Violet (VT) 	100	111-02174
T50LWT	4.6	390	110	225	PA66	White (WT) 	100	111-02175
T50LYL	4.6	390	110	225	PA66	Yellow (YL) 	100	111-02176
T120SGY	7.8	278	55	535	PA66	Grey (GY) 	100	111-02145
T120SOR	7.8	278	55	535	PA66	Orange (OR) 	100	111-02147
T120SRD	7.8	278	55	535	PA66	Red (RD) 	100	111-02148
T120SVT	7.8	278	55	535	PA66	Violet (VT) 	100	111-02149
T120SWT	7.8	278	55	535	PA66	White (WT) 	100	111-02150
T120SYL	7.8	278	55	535	PA66	Yellow (YL) 	100	111-02151
T120SBL	7.8	278	55	535	PA66	Blue (BL) 	100	111-02142
T120SBN	7.8	278	55	535	PA66	Brown (BN) 	100	111-02143
T120SGR	7.8	278	55	535	PA66	Green (GR) 	100	111-02144
T120RBL	7.8	390	105	535	PA66	Blue (BL) 	100	111-02134
T120RGR	7.8	390	105	535	PA66	Green (GR) 	50	111-02135
T120ROR	7.8	390	105	535	PA66	Orange (OR) 	50	111-02138
T120RRD	7.8	390	105	535	PA66	Red (RD) 	50	111-02139
T120RVT	7.8	390	105	535	PA66	Violet (VT) 	50	111-02140
T120RYL	7.8	390	105	535	PA66	Yellow (YL) 	50	111-02141
LK5YL	13.2	535	150	1 115	PA66	Yellow (YL) 	50	111-02200
LK5RD	13.2	535	150	1 115	PA66	Red (RD) 	50	111-02177
LK5GR	13.2	535	150	1 115	PA66	Green (GR) 	50	111-02197
LK5BL	13.2	535	150	1 115	PA66	Blue (BL) 	50	111-02196

All dimensions are in mm. Subject to technical changes

**Recommended Tools**

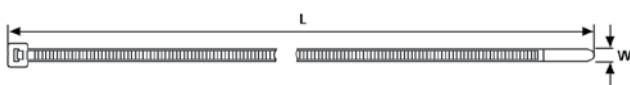
Type				
	<b>TG008</b>	<b>MK10TEN</b>	<b>EVO7i</b>	<b>EVO0UT</b>
Page	57	57	57	57



### Outdoor Use Cable Ties (UV and Weather Resistant)

#### T-Series, PA66W (Black)

- Operating temperature -40°C to +85°C
- Flammability UL94 V2
- High tensile strength with very low insertion force
- Inside serrated cable ties for a strong hold onto bundles
- Easily installed either by hand or with a tensioning tool
- Only high quality plastic is used meeting recycling targets
- Made from 100% high quality plastic, allows for good recycling



T18S - LK5



T-Series cable ties for outdoor use

HF ✓ RoHS ✓

**i** Locally manufactured

Type	Width (W)	Length (L)	Bundle Ø max.	N	Material (p3)	Colour	Qty	Article-No.
T18RWBK	2.5	100	22	80	PA66W	Black (BK) ■	100	111-02187
T30RWBK	3.5	150	35	135	PA66W	Black (BK) ■	100	111-02188
T50RWBK	4.6	200	35	135	PA66W	Black (BK) ■	100	111-02191
T50IWBK	4.6	305	85	225	PA66W	Black (BK) ■	100	111-02194
T50LWBK	4.6	390	110	225	PA66W	Black (BK) ■	100	111-02195
T120RWBK	7.6	390	105	535	PA66W	Black (BK) ■	50	111-02193
LK5WBK	13.2	535	150	1 115	PA66W	Black (BK) ■	50	111-02192

All dimensions are in mm. Subject to technical changes

#### Recommended Tools

Type				
	TG008	MK10TEN	EVO7i	EV0CUT
Page	57	57	57	57

Suitable for the following industries:



## Protection Channel for Stainless Steel Ties

### LFPC-Series, PO (Black)

- Operating temperature -40°C to +90°C
- Flammability UL94 V0 (Flame retardant)
- Smooth surface protects bundle against chafing caused by vibrations and shocks
- Suitable with stainless steel cable ties
- Can be cut from a roll to any length



LFPC protective channel



MBTXH cable tie with LFPC protective channel

HF ✓



Material fire protection properties relate to defined test samples tested. Test is under laboratory conditions and not directly transferable to product made from this material.

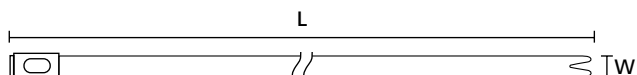
Type	Width (W)	Material (p4)	Colour	Length (m)	Article-No.	Recommended Ties
LFPC70	7	PO	Black (BK) ■	25	111-93000	MBTS
LFPC83	8.3	PO	Black (BK) ■	25	111-00257	MBTH
LFPC103	10.3	PO	Black (BK) ■	25	111-94000	MBTH
LFPC129	12.9	PO	Black (BK) ■	25	111-00253	MBTXH
LFPC132	13.2	PO	Black (BK) ■	25	111-00254	MBTXH
LFPC150	15	PO	Black (BK) ■	25	111-95000	MBTXH
LFPC163	16.3	PO	Black (BK) ■	25	111-00255	AMT, MBTUH

All dimensions in mm. Subject to technical changes.

## Stainless Steel Cable Ties with Ball-lock

### MBT-Series, SS316

- Non-releasable locking feature
- Operating temperature -80°C to +538°C
- Corrosion and weather resistant
- Outstanding chemical resistance
- Anti-magnetic
- Non-burning



MBT-Series cable ties can be used in solar farms

HF ✓ RoHS ✓ LFH ✓

Type	Width (W)	Length (L)	Bundle Ø max.	N	Material (p4)	Article-No.
MBT5S	4.6	127	25	670	SS316	911-01947
MBT8S	4.6	201	50	670	SS316	911-01948
MBT14S	4.6	362	102	670	SS316	911-01950
MBT20S	4.6	521	152	670	SS316	911-01952
MBT8H	7.9	201	50.8	1115	SS316	911-01949
MBT14H	7.9	362	102	1115	SS316	911-01951
MBT20H	7.9	521	152	1115	SS316	911-01953
MBT27H	7.9	681	203	1115	SS316	911-01954

All dimensions in mm. Subject to technical changes.

### Recommended Tools

Type		
	HT338	MK9SST
Page	58	58

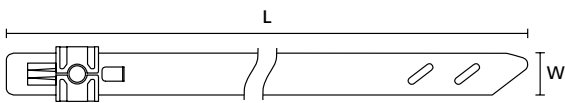
### Suitable for the following industries:



## Stainless Steel Cable Ties with Punch-locking Mechanism

### MST-Series, SS304

- Operating temperature -80°C to +538°C
- No loosening after bundling
- Hazardous environments
- Corrosion and weather resistant
- Significantly improved vibration resistance
- Outstanding chemical resistance
- Space saving solution
- Safe cut-off (no sharp edges)
- Non-burning



MST-Series



MST-Series designed for use in hazardous environments

HF ✓ RoHS ✓ LFH ✓

Type	Width (L)	Length (W)	Bundle Ø min.	Bundle Ø max.	N	Material (p4)	Article-No.
MST200S	207	5.9	5	50	900	SS304	111-01549
MST360S	360	5.9	5	100	900	SS304	111-01550
MST500S	500	5.9	5	145	900	SS304	111-01551
MST700S	700	5.9	5	205	900	SS304	111-01552
MST360M	369	8.9	8	100	1.5	SS304	111-01631
MST500M	509	8.9	8	145	1.5	SS304	111-01632
MST700M	700	8.9	8	205	1.5	SS304	111-01633

All dimensions in mm. Subject to technical changes.

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

### Recommended Tools

Type		
	HT338	MK9SST
Page	58	58

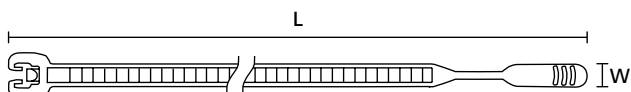
Suitable for the following industries:



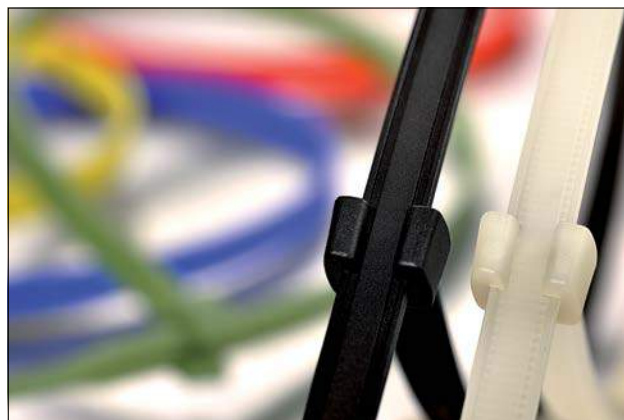
### Cable Ties with Open Head

#### Q-Series, PA66 (Black and Natural)

- Operating temperature -40°C to +85°C
- Open lock head for quick and easy insertion
- Integrated pre-locking function
- Inside serration for a strong hold around bundles easily
- Easily installed either by hand or with a tensioning tool
- Installation is 25% faster than the traditional cable ties



Q-Series



Q-ties can be used for bundling and securing cables, pipes and hoses

HF ✓ RoHS ✓



Locally manufactured

Type	Width (W)	Length (L)	Bundle Ø max.	N	Material (p3)	Colour	Article-No.
Q18R	2.6	105	24	80	PA66	Black (BK) ■	109-00030
Q18R	2.6	105	24	80	PA66	Natural (NT) ■	109-00001
Q18I	2.6	155	40	80	PA66	Black (BK) ■	109-00033
Q18I	2.6	15	40	80	PA66	Natural (NT) ■	109-00004
Q18L	2.6	195	50	80	PA66	Black (BK) ■	109-00036
Q18L	2.6	195	50	80	PA66	Natural (NT) ■	109-00007
Q30R	3.6	160	38	130	PA66	Black (BK) ■	109-00039
Q30R	3.6	160	38	130	PA66	Natural (NT) ■	109-00010
Q30L	3.6	200	50	130	PA66	Black (BK) ■	109-00041
Q30L	3.6	200	50	130	PA66	Natural (NT) ■	109-00012
Q30LR	3.6	250	65	130	PA66	Black (BK) ■	109-00043
Q30LR	3.6	250	65	130	PA66	Natural (NT) ■	109-00014
Q50R	4.7	210	50	220	PA66	Black (BK) ■	109-00047
Q50R	4.7	210	50	220	PA66	Natural (NT) ■	109-00018
Q50I	4.7	290	75	220	PA66	Black (BK) ■	109-00049
Q50I	4.7	290	75	220	PA66	Natural (NT) ■	109-00020
Q50L	4.7	410	110	220	PA66	Black (BK) ■	109-00051
Q50L	4.7	410	110	220	PA66	Natural (NT) ■	109-00022
Q120I	7.7	300	70	530	PA66	Black (BK) ■	109-00053
Q120I	7.7	300	70	530	PA66	Natural (NT) ■	109-00024
Q120R	7.7	420	110	530	PA66	Black (BK) ■	109-00055
Q120R	7.7	420	10	530	PA66	Natural (NT) ■	109-00026
Q120M	7.7	520	145	530	PA66	Black (BK) ■	109-00057
Q120M	7.7	520	45	530	PA66	Natural (NT) ■	109-00028

All dimensions in mm. Subject to technical changes.

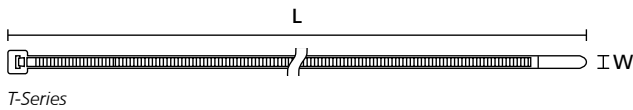
Suitable for the following industries:



### Heat-Stabilised Cable Ties: Temperatures up to +105°C

#### T-Series, PA66HS (Black and Natural)

- Temperature up to +105°C
- Inside serration
- Easily installed either by hand or with a tensioning tool
- Additional colours available on request



Heat stabilised T-Series cable ties up to +105°C

HF ✓ RoHS ✓

**i** Locally manufactured

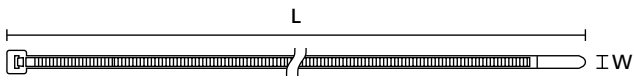
Type	Width (W)	Length (L)	Bundle Ø max.	N	Material (p3)	Colour	Article-No.
T18RHSBK	2.5	100	22	80	PA66HS	Black (BK) ■	111-01950
T18HSNT	2.5	100	22	80	PA66HS	Natural (NT) ■	111-01959
T18HSBK	2.5	145	35	80	PA66HS	Black (BK) ■	111-02358
T18HSNT	2.5	145	35	80	PA66HS	Natural (NT) ■	111-02359
T18LHSBK	2.5	205	55	80	PA66HS	Black (BK) ■	111-02049
T18LHSNT	2.5	205	55	80	PA66HS	Natural (NT) ■	111-02159
T30RHSNT	3.5	150	35	135	PA66HS	Natural (NT) ■	111-03259
T30RHSBK	3.5	150	35	135	PA66HS	Black (BK) ■	111-03050
T30LHSBK	3.5	198	50	135	PA66HS	Black (BK) ■	111-03450
T30LHSNT	3.5	198	50	135	PA66HS	Natural (NT) ■	111-03459
T30LHSBK	3.5	290	80	135	PA66HS	Black (BK) ■	111-03660
T30LHSNT	3.5	290	80	135	PA66HS	Natural (NT) ■	111-03569
T40RHSBK	4.0	175	40	180	PA66HS	Black (BK) ■	111-01623
T40RHSNT	4.0	175	40	180	PA66HS	Natural (NT) ■	111-01627
T50SHSNT	4.6	150	35	225	PA66HS	Natural (NT) ■	111-05859
T50SHSBK	4.6	150	35	225	PA66HS	Black (BK) ■	111-05850
T50RHSBK	4.6	200	50	225	PA66HS	Black (BK) ■	111-04950
T50HSBK	4.6	300	85	225	PA66HS	Black (BK) ■	111-05250
T50HSNT	4.6	300	85	225	PA66HS	Natural (NT) ■	111-05259
T50LHSNT	4.6	390	110	225	PA66HS	Natural (NT) ■	111-05436
T50LHSBK	4.6	390	110	225	PA66HS	Black (BK) ■	111-05450

All dimensions in mm. Subject to technical changes.

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



### T-Series, PA66HS (Black and Natural)



T-Series

Type	Width (W)	Length (L)	Bundle Ø max.	N	Material (p3)	Colour	Article-No.
T80RHSBK	4.7	210	55	355	PA66HS	Black (BK) ■	117-08070
T80RHSNT	4.7	210	55	355	PA66HS	Natural (NT) ■	111-05059
T80IHSBK	4.7	300	85	355	PA66HS	Black (BK) ■	111-08250
T80IHSNT	4.7	300	85	355	PA66HS	Natural (NT) ■	111-08259
T80LHSBK	4.7	390	110	355	PA66HS	Black (BK) ■	111-00388
T80LHSNT	4.7	390	110	355	PA66HS	Natural (NT) ■	111-05459
T120SHSBK	7.6	225	55	535	PA66HS	Black (BK) ■	111-12850
T120SHSNT	7.6	225	55	535	PA66HS	Natural (NT) ■	111-12824
T150R(H)	7.6	365	100	670	PA66HS	Black (BK) ■	111-15050
	7.6	365	100	670	PA66HS	Natural (NT) ■	111-15069
T120R(E)	7.6	387	100	535	PA66HS	Black (BK) ■	111-12050
	7.6	387	100	535	PA66HS	Natural (NT) ■	111-12059
T120M	7.6	460	125	535	PA66HS	Black (BK) ■	111-00153
T120XM	7.6	600	175	535	PA66HS	Black (BK) ■	111-12700
	7.6	600	175	535	PA66HS	Natural (NT) ■	111-12719
T120LHSNT	7.6	760	225	535	PA66HS	Natural (NT) ■	111-12449
T120LHSBK	7.6	760	225	535	PA66HS	Black (BK) ■	111-12440
T150M	8.9	530	150	780	PA66HS	Black (BK) ■	111-15609
T150L	8.9	820	243.8	780	PA66HS	Black (BK) ■	111-15410
T150XL	8.9	1 095	330.2	780	PA66HS	Black (BK) ■	111-15510

All dimensions in mm. Subject to technical changes.

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

### Recommended Tools

Type				
	TG008	MK10TEN	EVO7i	EVO0CUT
Page	57	57	57	57

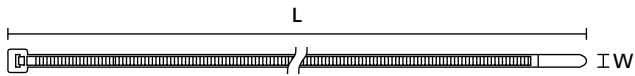
Suitable for the following industries:



### Chemical Resistant Cable Ties: Temperatures up to +170°C

#### T-Series, E/TFE (Blue)

- Temperature up to 170°C
- Resistant to radioactivity and UV light
- Good chemical resistance to acids, bases and oxidizing agents
- E/TFE is a non-hygroscopic material i.e. no moisture absorption
- Complies to UL94 V0 requirements



T-Series



T-Series E/TFE cable ties used in challenging applications



Type	Width (W)	Length (L)	Bundle Ø max.	N	Material (p3)	Colour	Article-No.
T18R	2.5	100	22	80	E/TFE	Blue (BL) ■	111-00659
T30R	3.5	150	36	133	E/TFE	Blue (BL) ■	111-00698
T50R	4.7	201	50	222	E/TFE	Blue (BL) ■	111-00732
T50L	4.7	382	105	222	E/TFE	Blue (BL) ■	111-00718
T120R	7.4	387	105	535	E/TFE	Blue (BL) ■	111-01125

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

#### Recommended Tools

Type				
	TG008	MK10TEN	EVO7i	EV0CUT
Page	57	57	57	57

Suitable for the following industries:

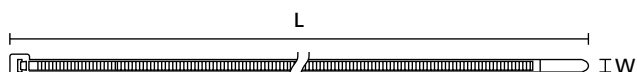




### Chemical Resistant Cable Ties: Temperatures up to +115°C

#### T-Series, PP (Black)

- Continuous operating temperatures up to +115°C
- Good chemical resistance to acids, bases and solvents
- Due to its low density cable tie can float on water
- Less hygroscopic material, almost no water absorption



T-Series



T-Series cable ties offer chemical resistance and operate at temperatures up to +115°C

HF ✓ RoHS ✓

**i** Locally manufactured

Type	Width (W)	Length (L)	Bundle Ø max.	N	Material (p4)	Colour	Article-No.
T18R	2.5	100	22	36	PP	Black (BK) ■	111-01917
T50R	4.6	202	44.5	111	PP	Black (BK) ■	111-04928
T120S	7.6	225	55.9	267	PP	Black (BK) ■	111-12827
T120R	7.6	387	104.1	267	PP	Black (BK) ■	111-12066

All dimensions in mm. Subject to technical changes.

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

#### Recommended Tools

Type				
	TG008	MK10TEN	EVO7i	EVO0CUT
Page	57	57	57	57

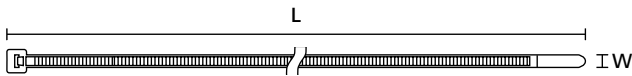
Suitable for the following industries:



### Heat Stabilised Cable Ties: Temperatures up to +195°C

#### T-Series, PA46 (Natural and Grey)

- Temperature applications up to +150°C (5000h) and at +195°C (500h)
- Long-term operating temperature up to +130°C
- Low smoke emission in the event of a fire
- PA46 is moisture sensitive
- Inside serrated
- Easily installed either by hand or with a tensioning tool



T-Series



T-Series cable ties used in environment with continuous high temperatures

RoHS ✓ LFH ✓

Type	Width (W)	Length (L)	Bundle Ø max.	N	Material (p3)	Colour	Article-No.
T18R	2.5	100	22	80	PA46	Natural (NT) ■	114-01879
T30R	3.5	150	35	135	PA46	Grey (GY) ■	111-00264
	3.5	150	35	135	PA46	Natural (NT) ■	114-03079
T50R	4.6	200	50	225	PA46	Grey (GY) ■	111-00824
	4.6	200	50	225	PA46	Natural (NT) ■	111-00525
T50I	4.6	300	85	225	PA46	Natural (NT) ■	111-05220
T50L	4.6	390	110	225	PA46	Natural (NT) ■	111-00526
T120R(E)	7.6	387	100	535	PA46	Grey (GY) ■	111-00819
	7.6	387	100	535	PA46	Natural (NT) ■	114-12179

All dimensions in mm. Subject to technical changes.

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

#### Recommended Tools

Type				
	TG008	MK10TEN	EVO7i	EVO0CUT
Page	57	57	57	57

Suitable for the following industries:



### High Impact Resistant Cable Ties

#### T-Series, PA66HIR(S) (ScanBlack)

- Operating temperature -40°C to +80°C and at +105°C (500h)
- Higher flexibility especially in cold environments
- Limited brittleness sensitivity
- Easily installed either by hand or with a tensioning tool
- Inside serration
- Flammability UL 94 HB



T-Series



Impact resistant T-Series cable tie used in harsh environments

HF ✓ RoHS ✓

Type	Width (W)	Length (L)	Bundle Ø max.	N	Material (p3)	Colour	Article-No.
T50R	4.6	200	50	225	PA66HIR(S)	Black (BK) ■	111-04890
T50I	4.6	300	85	225	PA66HIR(S)	Black (BK) ■	111-00222
T50L	4.6	390	110	225	PA66HIR(S)	Black (BK) ■	111-05441
T120I	7.6	300	80	525	PA66HIR(S)	Black (BK) ■	111-12203
T120R(E)	7.6	380	100	535	PA66HIR(S)	Black (BK) ■	111-00164
T120L	7.6	760	225	535	PA66HIR(S)	Black (BK) ■	111-12402

All dimensions in mm. Subject to technical changes.

#### Recommended Tools

Type				
	TG008	MK10TEN	EVO7i	EVO0CUT
Page	57	57	57	57

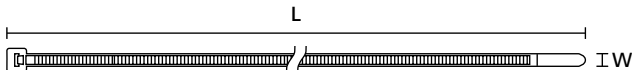
Suitable for the following industries:



### Cable Ties for Fire-Protection Systems

#### T-Series, PA66V0 (White)

- Operating temperature -40°C to +85°C
- Conforms to low smoke generation requirements (UL94 V0)
- Low emission of toxic gases and corrosive acids in event of fire
- High safety rating due to low fire hazard



T-Series

T-Series cable ties conforms to low smoke generation requirements

HF ✓ RoHS ✓ LFH ✓

Type	Width (W)	Length (L)	Bundle Ø max.	N	Material (p4)	Colour	Article-No.
T18R	2.5	100	22	80	PA66V0	White (WH) <input type="checkbox"/>	111-91819
T18L	2.5	205	55	80	PA66V0	White (WH) <input type="checkbox"/>	111-02043
T30R	3.5	150	35	135	PA66V0	White (WH) <input type="checkbox"/>	111-93019
T50R	4.6	200	50	225	PA66V0	White (WH) <input type="checkbox"/>	111-95019
T50I	4.6	300	85	225	PA66V0	White (WH) <input type="checkbox"/>	111-00317
T50L	4.7	390	110	225	PA66V0	White (WH) <input type="checkbox"/>	111-05438
T120R(E)	7.6	387	100	535	PA66V0	White (WH) <input type="checkbox"/>	111-91210

All dimensions in mm. Subject to technical changes.

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

### Recommended Tools

Type				
	TG008	MK10TEN	EVO7i	EV0CUT
Page	57	57	57	57

Suitable for the following industries:



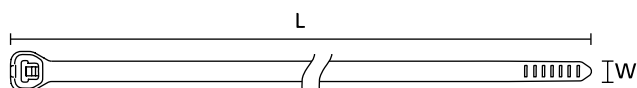
EN 45545-2



### Cable Ties with Smart Design

#### X-Series (Black)

- Operating temperature -40°C to +105°C
- Inside serrated
- High tensile strength around cable bundles
- Smooth, rounded head design
- Space saving solution
- Improved ergonomic design
- Provides a secure fastening with no lateral movement
- Available in weather resistant, high impact, heat stabilised material



X-series

X-series provides a superior fixing solution for tight applications

HF ✓ RoHS ✓

Type	Width (W)	Length (L)	Bundle Ø max.	N	Material (p3-4)	Colour	Article-No.
X20R	2.5	100	20	90	PA66HIRHS	Black (BK) ■	108-00066
	2.5	100	20	90	PA66W	Black (BK) ■	108-00072
X80S	4.7	150	35	355	PA66HIRHS	Black (BK) ■	108-00001
	4.7	150	35	355	PA66W	Black (BK) ■	108-00003
X80R	4.7	200	50	355	PA66HIRHS	Black (BK) ■	108-00004
	4.7	200	50	355	PA66W	Black (BK) ■	108-00010
X80I	4.7	300	84	355	PA66HIRHS	Black (BK) ■	108-00018
	4.7	300	84	355	PA66W	Black (BK) ■	108-00024
X80L	4.7	385	110	355	PA66HIRHS	Black (BK) ■	108-00028
	4.7	385	110	355	PA66W	Black (BK) ■	108-00034
X120R	7.7	369	100	535	PA66HIRHS	Black (BK) ■	108-00040
	7.7	369	100	535	PA66W	Black (BK) ■	108-00042
X250R	13	535	150	1.115	PA66HIRHS	Black (BK) ■	108-00050
	13	535	150	1.115	PA66W	Black (BK) ■	108-00052
X250I	13	715	205	1.115	PA66HIRHS	Black (BK) ■	108-00045
	13	715	205	1.115	PA66W	Black (BK) ■	108-00047

All dimensions in mm. Subject to technical changes.

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

#### Recommended Tools

Type				
	TG008	MK10TEN	EVO7i	EV0CUT
Page	57	57	57	57

Suitable for the following industries:



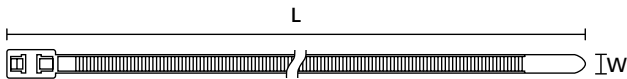
### Cable Ties for Parallel Routing

#### DH-Series (Black, Natural and Grey)

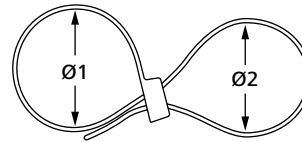
- Operating temperature -40°C to +85°C
- Possibility to separate bundles with only one cable tie
- Two heads create an inside and outside serrated loop
- Bundles can be different diameters
- Easily installed either by hand or with a tensioning tool



DH-Series cable ties for parallel routing



DH-Series



DH-Series maximum combined bundle diameter

RoHS ✓

#### Ordering Information

Type	Width (W)	Length (L)	Bundle Ø max.	1 <sup>st</sup> Loop min.	2 <sup>nd</sup> Loop min.	Material (p3)	Colour	Article-No.
T50RDH	4.7	210	38	225	180	PA46	Grey (GY)	117-05168
	4.7	210	38	225	180	PA66	Black (BK)	117-05000
	4.7	210	38	225	180	PA66	Natural (NT)	117-05002
	4.7	210	38	225	180	PA66HS	Black (BK)	117-05050
	4.7	210	38	225	180	PA66W	Black (BK)	117-05060
T50IDH	4.7	305	76	225	180	PA66	Natural (NT)	117-05303
	4.7	305	76	225	180	PA66HS	Black (BK)	117-05350
	4.7	305	76	225	180	PA66UV	Black (BK)	117-05360
T50LDH	4.7	395	100	225	180	PA66	Natural (NT)	117-05461
	4.7	395	100	225	180	PA66HS	Black (BK)	117-00008

All dimensions in mm. Subject to technical changes.

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

#### Recommended Tools

Type				
	TG008	MK10TEN	EVO7i	EV0CUT
Page	57	57	57	57

Suitable for the following industries:



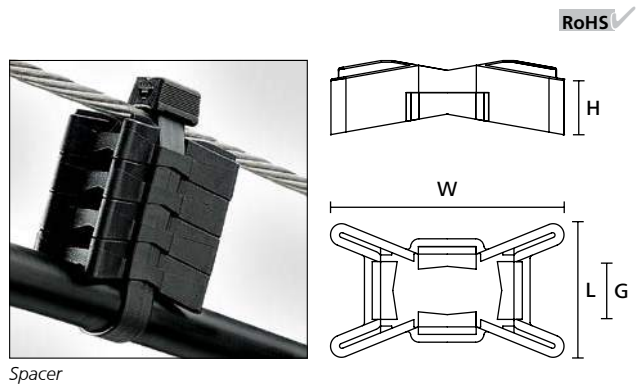
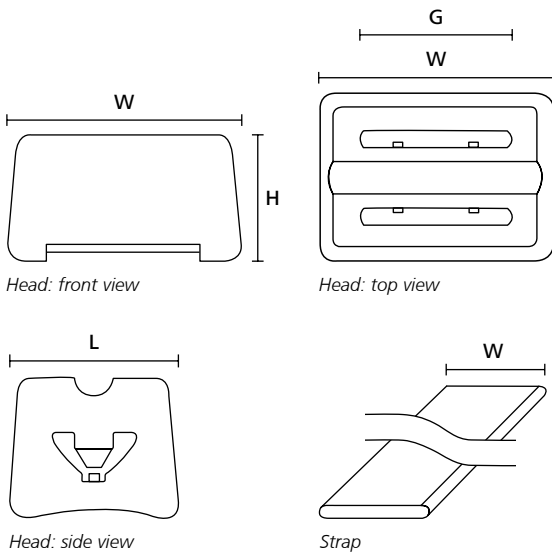
### Endless Cable Tie with Separate Head and Spacer

#### EL-TY-Series (Black)

- Operating temperature -40°C to +115°C
- Made of very strong Polyacetal (POM) material
- System consists of endless strap, spacers and heads
- Head includes stainless steel pawls for secure fixing
- Good resistance to ageing and UV light
- Suits any bundle diameter
- Reduces inventory



EL-TY series can be cut to suit any bundle with EVO9



Spacer

Type	Width (W)	Length (L)	Height (H)	N	Strap Width max. (G)	Material (p3-4)	Colour	Qty	Article-No.
EL-TY (TELS1)	12.7	15.2 m	-	1112	-	POM	Black (BK) ■	15m Strap, 30 Heads	111-30000
EL-TY (TELSH)	20.3	15.8	12.4	-	12.7	POM	Black (BK) ■	25 Heads	111-31000
EL-TY (TELS-SPK2)	53.3	30.5	17	-	12.7	PP	Black (BK) ■	50 Spacer	111-32000

All dimensions in mm. Subject to technical changes.

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

#### Recommended Tools

Type	
	EV07i
Page	57

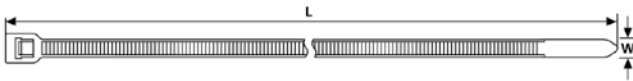
Suitable for the following industries:



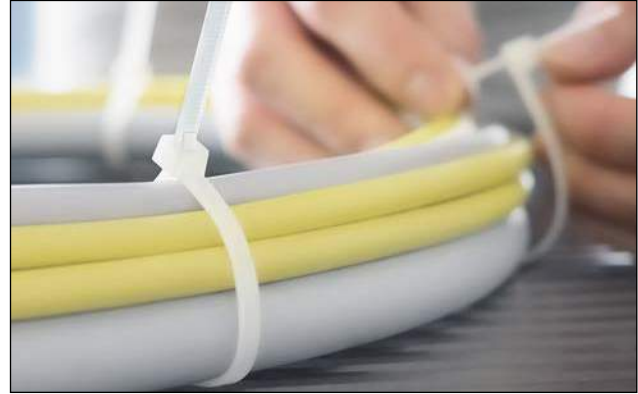
### Releasable Cable Ties

#### RELK- and RLT-Series (Black and Natural)

- Operating temperature -40°C to +85°C
- Indoor or outdoor use
- High temperatures
- Inside serrated
- Releasable and reusable
- Extended trigger for simple and quick release



RELK-, RLT Series Releasable Ties



RELK and RLT cable ties can be easily re-opened and re-used

RoHS ✓

#### RELK-Series

Type	Length (L)	Width (W)	Bundle Ø max.	N	Material (p3)	Colour	Article-No.
RELK2R	200	4.6	50	200	PA66	Natural (NT) ■	115-02202
RELK2M	250	4.6	65	200	PA66	Natural (NT) ■	115-06729
RELK2M	250	4.6	65	200	PA66	Black (BK) ■	115-02000
RELK2I	300	4.6	81	200	PA66	Natural (NT) ■	115-02101
RELK2I	300	4.6	81	200	PA66	Black (BK) ■	115-06760
RELK2L	350	4.6	95	200	PA66	Natural (NT) ■	115-06919
RELK2L	350	4.6	95	200	PA66	Black (BK) ■	115-02300

#### RLT-Series

Type	Length (L)	Width (W)	Bundle Ø max.	N	Material (p3)	Colour	Article-No.
RLT120	340	7.6	90	535	PA66	Natural (NT) ■	111-70319
RLT120	340	7.6	90	535	PA66	Black (BK) ■	111-70361
RLT150	770	8.9	225	670	PA66	Natural (NT) ■	111-70119
RLT150	770	8.9	225	670	PA66	Black (BK) ■	111-70110
RLT150	770	8.9	225	670	PA66W	Black (BK) ■	111-70160
RLT150	770	8.9	225	670	PA66HS	Natural (NT) ■	111-70159

All dimensions in mm. Subject to technical changes.

Suitable for the following industries:

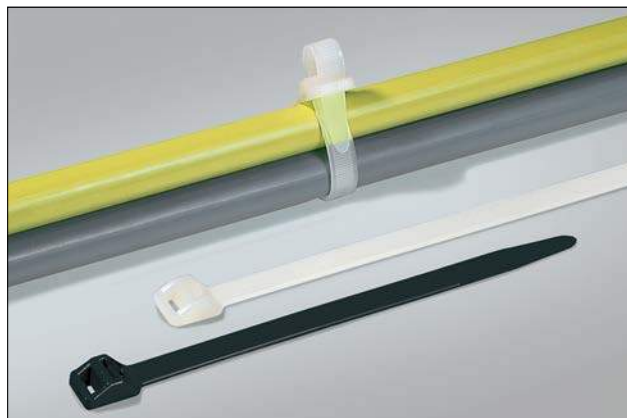




### Releasable Cable Ties with Tuck-Away

#### RT- and REL-Series (Black and Natural)

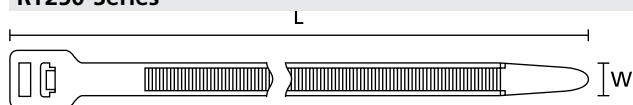
- Operating temperature -40°C to +85°C
- Releasable and reusable
- Suitable for larger and/or heavy bundles
- Eyelet allows excess tail to be tucked neatly away
- Extended trigger for simple and quick release
- Protected trigger to avoid accidental release
- RT250 cable ties inside serrated



Reusable cable ties for large or heavy bundles

RoHS ✓

#### RT250-Series



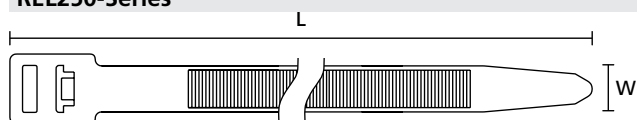
RT250-Series

Type	Width (W)	Length (L)	Bundle Ø max.	N	Material (p3)	Colour	Article-No.
RT250M	12.5	565.3	150	1 115	PA66	Black (BK) ■	131-75610
	12.5	565.3	150	1 115	PA66	Natural (NT) ■	131-75619
	12.5	565.3	150	1 115	PA66UV	Black (BK) ■	131-75620
RT250XL	12.5	1 030	305	1 115	PA66	Black (BK) ■	131-75510
	12.5	1 030	305	1 115	PA66	Natural (NT) ■	131-75519

All dimensions in mm. Subject to technical changes.

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

#### REL250-Series



REL250-Series

Type	Width (W)	Length (L)	Bundle Ø max.	N	Material (p3)	Colour	Article-No.
REL250S	12.2	230	50	1 115	PA66HIR(S)	Black (BK) ■	111-00074
REL250X	12.2	385	100	1 115	PA66HIR(S)	Black (BK) ■	111-00075

All dimensions in mm. Subject to technical changes.

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

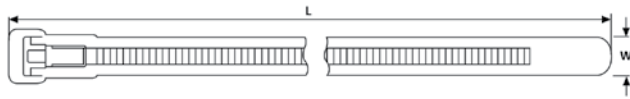
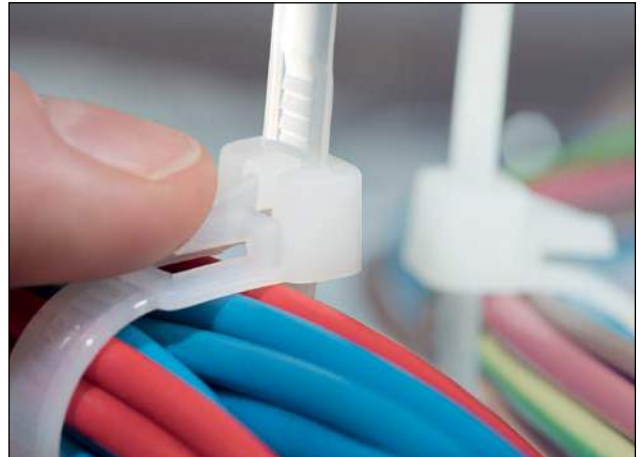
Suitable for the following industries:



### Releasable Cable Ties with Click-Down Lever

#### REL-Series (Black and Natural)

- Operating temperature -40°C to +85°C
- Releasable and reusable for medium-weight loads
- Extremely easy-to-operate release mechanism
- Can be opened and closed repeatedly
- Opens simply and quickly with only one hand
- Inside serrated
- Also available in PA66W (weather) for outdoor applications



REL Series

REL series can be opened with one hand



Type	Width (W)	Length (L)	Bundle Ø max.	N	Material (p3)	Colour	Article No
REL100	6.5	100	21	180	PA66	Natural (NT) ■	131-21019
REL140	7.5	140	35	200	PA66	Natural (NT) ■	131-21419
REL140	7.5	140	35	200	PA66	Black (BK) ■	131-21410
REL140	7.6	150	35	200	PA66W	Black (BK) ■	131-21460
REL180	6.5	180	46	150	PA66	Black (BK) ■	115-40801
REL250	7.6	250	68	200	PA66	Natural (NT) ■	131-22519
REL250	7.6	250	68	200	PA66	Black (BK) ■	131-22510
REL250	7.5	250	68	200	PA66W	Black (BK) ■	131-22560

All dimensions in mm. Subject to technical changes.

Suitable for the following industries:



### Elastic Releasable Cable Ties

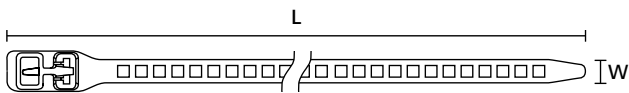
#### SOFTFIX-Series, TPU (Black)

- Operating temperature -40°C to +85°C
- Elastic and flexible with rounded and smooth edges
- Releasable and reusable
- Double slotted head with fixation pawl
- Flexibility ensures steady and evenly distributed pressure
- Secure in vertical position: prevents slipping or loosening of bundle
- Suitable for moving elements and vibrating applications e.g. windmills, machines, robotics, pulsating tubing and conduits
- Ideal use for temporary installations
- Long lifetime when used indoor
- Remains flexible even at cold temperatures (-20°C)



SOFTIX ties' elasticity makes them suitable for use in many indoor applications

HF ✓ RoHS ✓



OFTFIX-Series

**i** With 2<sup>nd</sup> loop to run bundles in parallel!

Type	Width (W)	Length (L)	Bundle Ø max.	N	Material (p4)	Colour	Qty	Article-No.
SOFTFIXXS	7	180	45	57	TPU	Black (BK) ■	16	115-07190
SOFTFIXS	7	260	70	57	TPU	Black (BK) ■	12	115-07270
SOFTFIXM	11	260	65	123	TPU	Black (BK) ■	8	115-11270
SOFTFIXL	11	340	90	123	TPU	Black (BK) ■	6	115-11350
SOFTFIXXL	28	580	150	360	TPU	Black (BK) ■	3	115-28590
SOFTFIXXXL	28	880	240	360	TPU	Black (BK) ■	3	115-28898

All dimensions in mm. Subject to technical changes.

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

Suitable for the following industries:



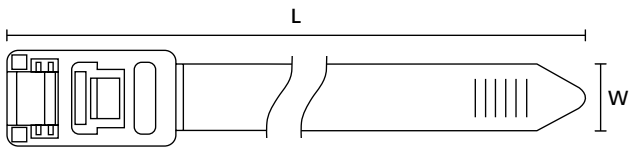
### Releasable Cable Ties with Quick Release

#### SpeedyTie®, PA66 (Yellow)

- Operating temperature -40°C to +85°C
- Releasable and reusable cable tie
- Bears loads of up to 888N (approx. 90kg)
- Temporary or permanent applications
- Can be used for parallel bundling
- Easy to handle when wearing work gloves



Excess tails can be neatly tucked away



SpeedyTie



Type	Width (W)	Length (L)	Bundle Ø max.	N	Material (p3)	Colour	Qty	Article-No.
RTT750HR1	13	752	210	888	PA66	Yellow (YL) <span style="color: yellow;">■</span>	5	115-00001
RTT750HR2	13	752	210	888	PA66	Yellow (YL) <span style="color: yellow;">■</span>	25	115-00000

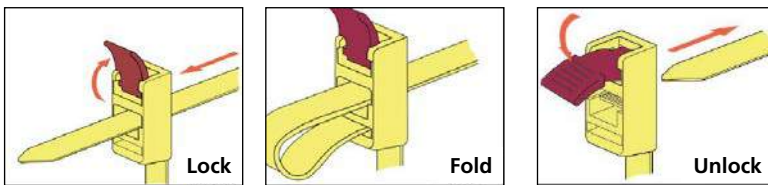
All dimensions in mm. Subject to technical changes.

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

Suitable for the following industries:



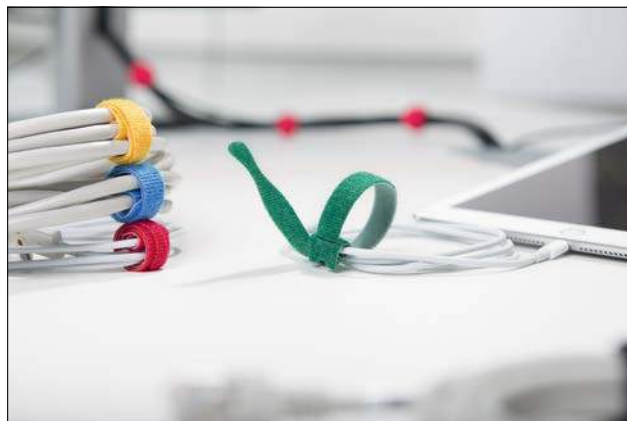
#### Locking and unlocking of Releasable and Reusable Cable Tie



### Velcro Cable Ties

#### TEXTIE-Series, PP (Black and Colour)

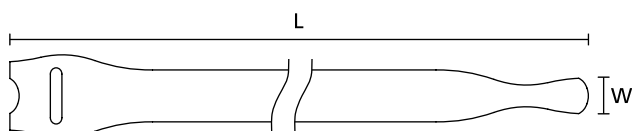
- Operating temperature -40°C to +85°C
- Quick and simple to use without tools
- Re-usable up to 400 times
- Various colours for easy identification
- Indoor and outdoor use
- Can be attached to bundles permanently
- Resistant to ageing, no corrosion



TEXTIE's functional design ensures it never gets lost

#### TEXTIE-Series

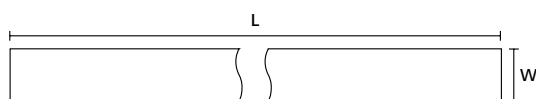
RoHS ✓



TEXTIE -Series S, M and L

Type	Width (W)	Length (L)	Bundle Ø max.	Material Loop (p3)	Material Hook (p4)	Colour	Article-No.
TEXTIE S	12.5	150	45	PA66	PP	Black (BK) ■	130-00012
TEXTIE M	12.5	200	60	PA66	PP	Black (BK) ■	130-00013
	12.5	200	60	PA66	PP	Blue (BL) ■	130-00018
	12.5	200	60	PA66	PP	Green (GR) ■	130-00017
	12.5	200	60	PA66	PP	Red (RD) ■	130-00014
	12.5	200	60	PA66	PP	White (WT) □	130-00021
	12.5	200	60	PA66	PP	Yellow (YL) ■	130-00016
TEXTIE L	12.5	330	100	PA66	PP	Black (BK) ■	130-00019

#### TEXTIE-Series 5 and 25m Lengths



TEXTIE-Series 5 and 25m

Type	Width (W)	Length (L)	Material Loop (p3)	Material Hook (p4)	Colour	Article-No.
TEXTIE 5M	12.5	5 000	PA66	PP	Black (BK) ■	130-00020
TEXTIE 25M	13	25 000	PA66	PP	Black (BK) ■	130-00022

All dimensions in mm. Subject to technical changes.

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

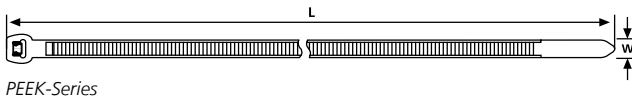
Suitable for the following industries:



## Cable Ties for High Temperatures up to 240°C

### PEEK-Series, PEEK (Beige)

- High temperature applications from -55°C to +240°C
- Hazardous environments
- Excellent chemical and radium ray resistance
- Outside or inside serrated
- Close fit to the cable bundle due to the deepening head shape
- Easy insertion combined with high tensile strength
- Takes up less space due to curved head design
- Combines the performance of a metal tie with the ease of use of a polyamide cable tie
- Easily installed either by hand or with a tensioning tool



PEEK-Series' contoured head takes up less space, gives a low insertion force and offers high strength



PEEK tie head design

HF ✓ RoHS ✓

**i** Preferably used with PEEK foot part (p50 or p55)

### PEEK Ties, Outside Serrated

Type	Width (W)	Length (L)	Bundle Ø max.	N	Material (p4)	Colour	Article-No.
PTZA	3.4	145	35	230	PEEK	Beige (BGE) ■	118-00032
PT3B	4.7	250	65	300	PEEK	Beige (BGE) ■	118-00116

### PEEK Ties, Inside Serrated

Type	Width (W)	Length (L)	Bundle Ø max.	N	Material (p4)	Colour	Article-No.
PT220	4.7	220	56	380	PEEK	Beige (BGE) ■	111-01235

All dimensions in mm. Subject to technical changes.

### Recommended Tools

Type	
	EVO7i
Page	57

Suitable for the following industries:



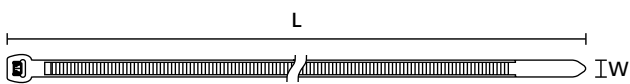
### Cable Ties for Soft Insulation Wires

#### OS-Series (Black, Natural and Colour)

- Outside serrated
- Tie follows the contours of the cable bundle perfectly
- Takes up less space due to curved head design
- Easy insertion combined with high tensile strength
- Temperatures up to +195°C (500h)
- PA66V0 cable ties fulfill Limited Fire Hazard requirements
- Easy application either manually or with a processing tool



Outside serrated OS-Series cable tie with smooth surface to the bundle.



OS-Series



OS-Series Curved head design



Type	Width (W)	Length (L)	Bundle Ø min.	Bundle Ø max.	N	Material (p3-4)	Colour	Article-No.
T18ROS	2.5	100	1.6	20	80	PA66HS	Natural (NT) ■	118-00035
	2.5	100	1.6	20	80	PA66W	Black (BK) ■	118-00125
	2.5	100	1.6	20	80	PA66HS	Black (BK) ■	118-04701
	2.5	100	1.6	20	80	PA66V0	White (WT) □	118-00079
T30ROS	3.4	145	1.6	35	135	PA66HS	Natural (NT) ■	118-00064
	3.4	145	1.6	35	135	PA66HS	Black (BK) ■	118-04800
T30LOS	3.4	200	1.6	50	135	PA66HS	Natural (NT) ■	118-00044
	3.4	200	1.6	50	135	PA66V0	White (WT) □	118-00080
	3.4	200	1.6	50	135	PA66W	Black (BK) ■	118-00126
	3.4	200	1.6	50	135	PA66HS	Black (BK) ■	118-04900
T50SOS	4.6	150	1.6	35	225	PA66HS	Black (BK) ■	118-05850
T50ROS	4.6	200	1.6	50	225	PA66HS	Natural (NT) ■	118-05059
	4.6	200	1.6	50	225	PA66V0	White (WT) □	118-00065
	4.6	200	1.6	50	225	PA66W	Black (BK) ■	118-00127
	4.6	200	1.6	50	225	PA46	Grey (GY) ■	118-05078
	4.6	200	1.6	50	225	PA66HS	Black (BK) ■	118-05040
T50MOS	4.6	245	1.6	66	225	PA66HS	Natural (NT) ■	118-00055
	4.6	245	1.6	66	225	PA66V0	White (WT) □	118-00081
	4.6	245	1.6	66	225	PA66W	Black (BK) ■	118-00128
	4.6	245	1.6	66	225	PA66HS	Black (BK) ■	118-00018
T50LOS	4.6	384	1.6	110	225	PA66HS	Black (BK) ■	118-05900
T120ROS	7.6	385	5	105	535	PA66HS	Natural (NT) ■	118-00067
	7.6	385	5	105	535	PA66V0	White (WT) □	118-00082
	7.6	385	5	105	535	PA66W	Black (BK) ■	118-00130
	7.6	385	5	105	535	PA66HS	Black (BK) ■	118-00066

All dimensions in mm. Subject to technical changes.

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

#### Recommended Tools

Type				
	TG008	MK10TEN	EVO7i	EV0CUT
Page	57	57	57	57

Suitable for the following industries:



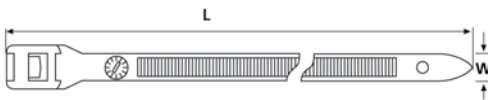
EN 45545-2

### Cable Ties with Low Profile Head

#### PE- and RPE-Series (Black and Colour)

- Operating temperature -40°C to +150°C
- Outside serration
- Colour cable ties can be used for identification
- Broad contact area with cable, minimising risk of damage
- Low profile head for for limited space
- Parallel entry for enhanced fit around circular bundles

#### PE-Series (Colour)



PE Series



Low profile cable ties, RPE- and PE Series



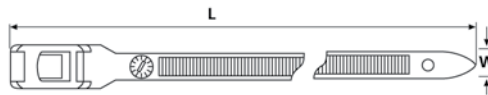
Type	Width (W)	Length (L)	Bundle Ø max.	N	Material (p3)	Colour	Article-No.
PE180	9	180	42	445	PA66HS	Black (BK) ■	112-18061
	9	180	42	445	PA66HSW	Black (BK) ■	112-18060
PE400	9	400	116	445	PA66	Blue (BL) ■	112-18101
	9	400	116	445	PA66	Green (GR) ■	112-18100
	9	400	116	445	PA66	Red (RD) ■	112-18102
	9	400	116	445	PA66	Yellow (YL) ■	112-18103
PE530	9	535	146	445	PA66HSW	Black (BK) ■	112-53060

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

#### Recommended Tools

Type				
	TG008	MK10TEN	EVO7i	EVO0CUT
Page	57	57	57	57

#### RPE-Series Releasable (Black)



RPE Series

Type	Width (W)	Length (L)	Bundle Ø max.	N	Material (p3)	Colour	Article-No.
RPE275	9	275	69	445	PA66HS	Black (BK) ■	112-00005
	9	275	69	445	PA66HSW	Black (BK) ■	112-27560
RPE350	9	350	92	445	PA66HSW	Black (BK) ■	112-00006
	9	350	92	445	PA66HSW	Black (BK) ■	112-35060

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

#### Suitable for the following industries:





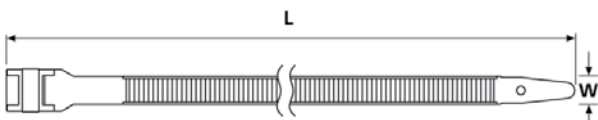
## Cable Ties with Low Profile Head

### LPH-Series (Black)

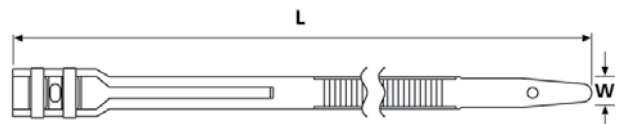
- Operating temperature -40°C to +85°C
- Good tensile strength with a single or a double bridged head
- Outside serration
- Design protects against damage to cable insulation
- Low profile head for optimised use especially in restricted areas
- Strap is threaded parallel through the low profile head



LPH Series Low Profile Ties.



LPH175 Series



LPH275 Series, LPH350 Series

Type	Width (W)	Length (L)	Bundle Ø max.	N	Material (p3)	Colour	Article-No.
LPH175	9	175	40	310	PA66	Black (BK) ■	112-00208
LPH275	9	265	62	480	PA66HIR(S)	Black (BK) ■	112-00303
LPH350	9	355	92	480	PA66HIR(S)	Black (BK) ■	112-00403
LPH500	9	505	140	540	PA66HIR(S)	Black (BK) ■	112-00033
LPH700	9	752	220	540	PA66HIR(S)	Black (BK) ■	112-00034

All dimensions in mm. Subject to technical changes.

### Recommended Tools

Type	
	EV07i
Page	57

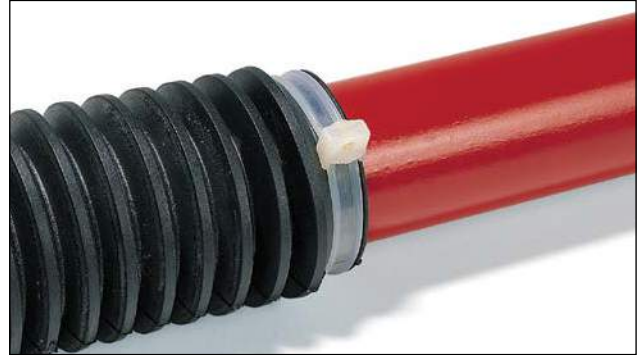
Suitable for the following industries:



### Cable Ties: Lock with Glass Fibre Pin

#### KR-Series (Black, Natural and Grey)

- Operating temperature -40°C to +105°C (dependent on material)
- Without serration
- Strap is locked into place with a glass-fibre reinforced pin
- Very secure and vibration resistant fixing
- Cable ties from PA12 are highly resistant to chemicals, impact and UV light
- KR-ties up to 426 mm are made as one piece
- For assembly a special KR-tool is required



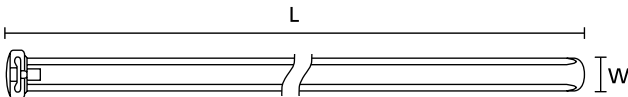
KR8/33 has been repeatedly proven in high vibration applications



Patented



#### KR-Series, 1-Piece (Black and Natural)



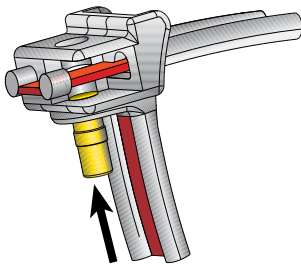
Cable tie KR-Series

Type	Width (W)	Length (L)	Bundle Ø max.	N	Material (p3)	Colour	Article-No.
KR6/35	6.1	360	93	490	PA66	Natural (NT) ■	121-63519
	6.1	360	93	490	PA66HS	Natural (NT) ■	121-63555
	6.1	360	93	490	PA66UV	Black (BK) ■	121-63560
KR8/21	8	210	47	785	PA66HS	Natural (NT) ■	121-82155
	8	210	47	785	PA66	Natural (NT) ■	121-82119
	8	210	47	785	PA66UV	Black (BK) ■	121-82160

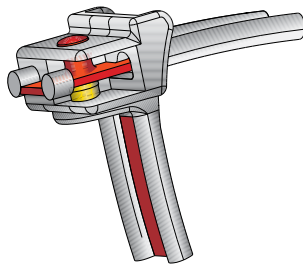
All dimensions in mm. Subject to technical changes.

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

#### Installation of Cable Tie with Lock and Glass Fibre Pin



Unlocked head of a KR-tie



Cable tie (red) is locked into place with pin

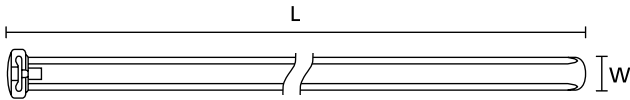
Suitable for the following industries:



EN 45545-2



### KR-Series, 1-Piece (Black, Natural and Grey)



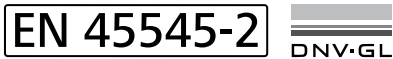
Cable tie KR-Series



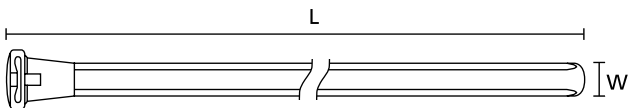
Type	Width (W)	Length (L)	Bundle Ø max.	N	Material (p3)	Colour	Article-No.
KR8/33	8	337	86	390	PA12	Black (BK) ■	121-83380
	8	337	86	785	PA66	Natural (NT) ■	121-83319
	8	337	86	785	PA46	Grey (GY) ■	121-83378
	8	337	86	785	PA66HS	Natural (NT) ■	121-83355
	8	337	86	785	PA66UV	Black (BK) ■	121-83360
KR8/43	8	426	105	785	PA66HS	Black (BK) ■	121-74360
	8	426	105	785	PA66HS	Natural (NA) ■	121-74359

All dimensions in mm. Subject to technical changes.

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



### KR-Series, Ultrasonic Welded (Black and Natural)



Cable tie KR-Series, ultrasonic welded

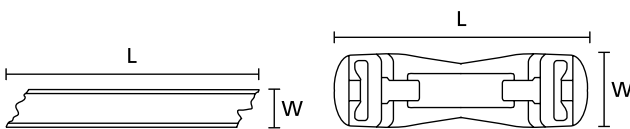
**i** Other dimensions available on request

Type	Width (W)	Length (L)	Bundle Ø max.	N	Material (p3)	Colour	Article-No.
KR8/50	8	500	152	785	PA66	Natural (NT) ■	121-05019
KR8/60	8	600	184	785	PA66W	Black (BK) ■	121-06060

All dimensions in mm. Subject to technical changes.

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

### KR-Series, Endless (Black and Natural)



Cable tie KR8S1

Double-head KR8C5



Type	Width (W)	Length (L)	N	Material (p3)	Colour	Article-No.
KR8/S1	8	50m	785	PA66HS	Natural (NT) ■	121-98151
	8	50m	785	PA66W	Black (BK) ■	121-98160
KR8/C5	11.7	38	-	PA66HS	Natural (NT) ■	121-58551
	11.7	38	-	PA66W	Black (BK) ■	121-58560

All dimensions in mm. Subject to technical changes.

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

### Detectable Cable Ties

#### MCT-Series (Blue)

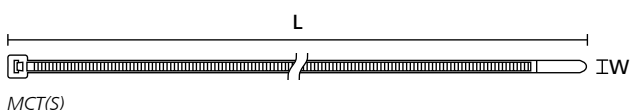
- Operating temperature -40°C to +85°C
- Total metal dispersion throughout tie
- Supports quality assurance in the production of food (e.g. \*HACCP process)
- Blue colour for easy visual detection
- Greatly reduces risk of contamination
- Magnetic and X-Ray detectable (detection level depending on specific application and equipment)



A safe and contamination free production process with MCT50L

HF ✓ RoHS ✓

#### MCT-Series, PPMP



**i** Unique cable tie manufacturing process, includes metallic pigments detected by standard metal-detecting equipment. Ideally suited for cable installation in food and life sciences manufacturing processes.

Type	Width (W)	Length (L)	Bundle Ø max.	N	Material (p4)	Colour	Article-No.
MCTPP18R	2.5	100	22	85	PPMP	Blue (BL) ■	111-01664
MCTPP30R	3.5	150	35	130	PPMP	Blue (BL) ■	111-01665
MCTPP50R	4.6	200	50	150	PPMP	Blue (BL) ■	111-01666
MCTPP50L	4.6	390	110	150	PPMP	Blue (BL) ■	111-01667
MCTPP120R	7.6	387	100	380	PPMP	Blue (BL) ■	111-01668

All dimensions in mm. Subject to technical changes.

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

#### Recommended Tools

Type				
	TG008	MK10TEN	EVO7i	EVO0CUT
Page	57	57	57	57

#### MCT-Series releasable, PA66MP

Type	Width (W)	Length (L)	Bundle Ø max.	N	Material (p4)	Colour	Article-No.
MCTRELK2M	4.6	250	65	225	PA66MP	Blue (BL) ■	111-00937

All dimensions in mm. Subject to technical changes.

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

#### Suitable for the following industries:



\* HACCP (Hazard analysis and critical control points) is a management system designed to reduce and limit risks in food safety from biological, chemical and physical hazards in food production processes that may cause the finished product to be unsafe.

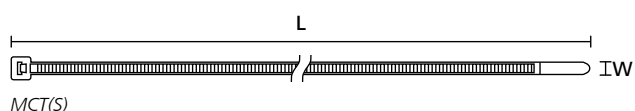
### Detectable Cable Ties, Corrosion Resistant

#### MCTS-Series, PA66MP+ (Colour)

- Operating temperature -40°C to +85°C
- Total metal dispersion throughout tie
- Supports quality assurance in the production of food (e.g. \*HACCP process)
- Greatly reduces risk of contamination
- Magnetic and X-Ray detectable (detection level depending on specific application and equipment)



Our detectable MCT(S) cable ties used in the food and pharmaceutical industry.



Type	Width (W)	Length (L)	Bundle Ø max.	N	Material (p4)	Colour	Article-No.
MCTS100	2.5	100	22	60	PA66MP+	Blue (BL)	111-01341
	2.5	100	22	60	PA66MP+	Mint Green (MGN)	111-01377
	2.5	100	22	60	PA66MP+	Mustard (MST)	111-01380
	2.5	100	22	60	PA66MP+	Russet (RUS)	111-01383
MCTS150	3.5	153	36	110	PA66MP+	Blue (BL)	111-01342
	3.5	153	36	110	PA66MP+	Mint Green (MGN)	111-01378
	3.5	153	36	110	PA66MP+	Mustard (MST)	111-01381
	3.5	153	36	110	PA66MP+	Russet (RUS)	111-01384
MCTS200	4.7	202	50	150	PA66MP+	Blue (BL)	111-01343
	4.7	202	50	150	PA66MP+	Mint Green (MGN)	111-01379
	4.7	202	50	150	PA66MP+	Mustard (MST)	111-01382
	4.7	202	50	150	PA66MP+	Russet (RUS)	111-01385
MCTS300	4.8	301	80	150	PA66MP+	Blue (BL)	111-01399
	4.8	301	80	150	PA66MP+	Mint Green (MGN)	111-01400
	4.8	301	80	150	PA66MP+	Mustard (MST)	111-01401
	4.8	301	80	150	PA66MP+	Russet (RUS)	111-01402

All dimensions in mm. Subject to technical changes.

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

#### Recommended Tools

Type				
	TG008	MK10TEN	EVO7i	EV0CUT
Page	57	57	57	57

Suitable for the following industries:



\* HACCP (Hazard analysis and critical control points) is a management system designed to reduce and limit risks in food safety from biological, chemical and physical hazards in food production processes that may cause the finished product to be unsafe.

### Detectable Cable Ties

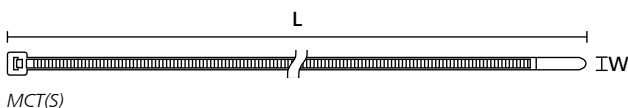
#### MCT-, PPNP and MCTS-Series, PPNP+ (Blue)

- Operating Temperature -40°C to +115°C
- Total metal dispersion throughout the tie
- Supports quality assurance in the production of food (e.g. \*HACCP process)
- Blue colour for easy visual detection
- Greatly reduces risk of contamination
- Magnetic and X-Ray detectable (detection level depending on specific application and equipment)



A safe and contamination free production process with MCT50L.

RoHS ✓



MCT(S)

**i** Ideally used with detectable cable tie mount (p69)

#### MCT-Series / MCTS-Series, PPMP

Type	Width (W)	Length (L)	Bundle Ø max.	N	Material (p4)	Colour	Article-No.
MCTPP18R	2.5	100	22	85	PPMP	Blue (BL) ■	111-01664
MCTPP30R	3.5	150	35	130	PPMP	Blue (BL) ■	111-01665
MCTPP50R	4.6	200	50	150	PPMP	Blue (BL) ■	111-01666
MCTPP50L	4.6	390	110	150	PPMP	Blue (BL) ■	111-01667
MCTPP120R	7.6	387	100	380	PPMP	Blue (BL) ■	111-01668

All dimensions in mm. Subject to technical changes.

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

#### MCTS-Series, PPMP+

Type	Width (W)	Length (L)	Bundle Ø max.	N	Material (p4)	Colour	Article-No.
MCTS200	4.7	201	50.0	140	PPMP+	Blue (BL) ■	111-01386

All dimensions in mm. Subject to technical changes.

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

### Recommended Tools

Type				
	TG008	MK10TEN	EVO7i	EVO0CUT
Page	57	57	57	57

Suitable for the following industries:



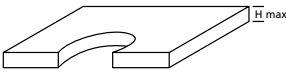

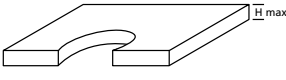

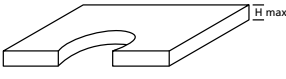

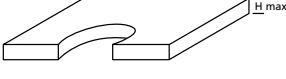

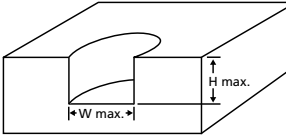

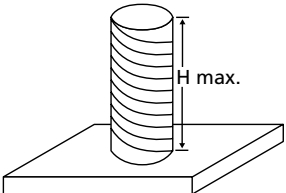

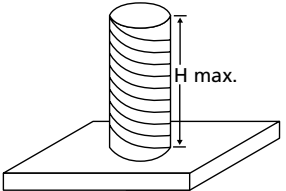

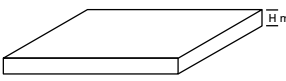



\* HACCP (Hazard analysis and critical control points) is a management system designed to reduce and limit risks in food safety from biological, chemical and physical hazards in food production processes that may cause the finished product to be unsafe.



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Stainless Steel Cable Tie Tensioning Tools .....	58



Application	Type		Description
	<b>Arrowhead</b>		<ul style="list-style-type: none"> <li>• High extraction forces</li> <li>• Click, securely in place</li> </ul>
	<b>Arrowhead with disc</b>		<ul style="list-style-type: none"> <li>• Disc minimises ingress of dust, dirt and water</li> <li>• Fixed safely inside drill hole withstands pressure from various directions</li> </ul>
	<b>Arrowhead with supporting wings</b>		<ul style="list-style-type: none"> <li>• Good and stable fixing in drilled holes</li> <li>• Supporting wings generate additional pressure to firmly secure fixing</li> <li>• Suitable in high vibration areas</li> </ul>
	<b>Arrowhead without supporting wings</b>		<ul style="list-style-type: none"> <li>• Secure fixing</li> <li>• Minimal space required</li> </ul>
	<b>Fir tree mount</b>		<ul style="list-style-type: none"> <li>• Easily pushed into pre-punched holes, panels, threaded or blind holes</li> <li>• Low insertion forces</li> <li>• Suitable for wide range of sheet thicknesses.</li> <li>• Disc on top of fir tree covers hole and minimises dust, dirt and water ingress</li> </ul>
	<b>Weld stud mount</b>		<ul style="list-style-type: none"> <li>• Easily attached by hand ("soft push") – no tool required</li> <li>• Very low insertion forces</li> <li>• Removed by twisting to left</li> </ul>
	<b>Weld stud fixings with lateral adjustment</b>		<ul style="list-style-type: none"> <li>• Special oval shape provides 5-6mm lateral adjustment</li> <li>• Caters for any misalignment of stud or incorrect positioning of ties on cables</li> <li>• Bundle can be moved when mounted</li> </ul>
	<b>EdgeClip</b>		<ul style="list-style-type: none"> <li>• Bundles, guides cable and wires on edges</li> <li>• Drill holes for fixing no longer required</li> <li>• Easily mounted by hand</li> <li>• Integrated metal clamp, secures keeps clip on edge</li> </ul>
	<b>EdgeClip twistable</b>		<ul style="list-style-type: none"> <li>• Bundles require flexible guiding</li> <li>• Can facilitate 90° or 360° rotation</li> </ul>



Refer to our website [www.hellermannTyton.co.za](http://www.hellermannTyton.co.za) for a comprehensive fixing tie selection



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

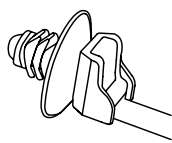
(Black and Grey)

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

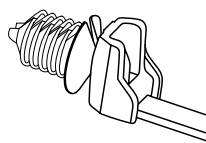


Fir tree foot parts can be used for variety of panel thicknesses

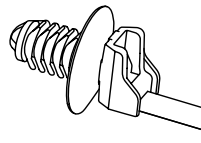
RoHS ✓



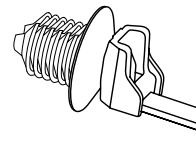
T50SOSFT6-E2



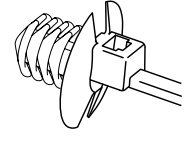
T50SOSFT6D10E



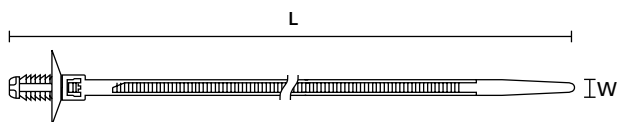
T50SOSFT6LGE



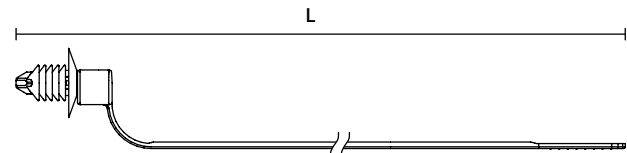
T50SOSFT8E



T18RDP5



1-Piece fixing tie with fir tree mount, standard design



Special design without a gap between the head and bundle; FT220DP7

Type	Width (W)	Length (L)	Bundle Ø max.	N	Disc Ø	Hole Ø (FH)	Panel Thickness	Material (p3)	Colour	Article-No.
T18RDP5	2.5	110	20	80	13	4.9-5.1	3.0-4.	PA66	Black (BK) ■	150-55610
T50SOSFT6-E2	4.6	160	35	180	16	6.3-7	0.6-4.2	PA66HS	Black (BK) ■	157-00085
T50SOSFT6D10E	4.6	163	32	180	9.8	5.8-6.2	0.5-5.5	PA46	Grey (GY) ■	157-00028
	4.6	163	32	225	9.8	5.8-6.2	0.8-5.5	PA66HS	Black (BK) ■	157-00045
T50SOSFT8E	4.6	163	35	225	16	8.0-8.5	0.6-6	PA46	Grey (GY) ■	157-00115
	4.6	163	35	225	16	8.0-8.5	0.6-6	PA66HS	Black (BK) ■	157-00072
T50SOSFT6LGE	4.6	165	35	180	16	6.3-7	0.7-7	PA66HS	Black (BK) ■	157-00228
T50SOSFT6LGE-E2	4.6	167	35	180	16	6.1-6.9	0.6-8.3	PA66HIRHS	Black (BK) ■	157-00242
T50SOSFT6E1	4.7	161.4	35	150	16	6.3-7	0.7-3	PA66HIRHS	Black (BK) ■	157-00033
T50SOSFT7-E	4.7	165	30	225	16.5	6.8-7.2	0.6-6	PA66HS	Black (BK) ■	157-00185
FT220DP7	4.7	232	40	225	16	6.8-7.2	0.8-5	PA66	Black (BK) ■	150-01700
T50SOSFT6LGE-E4	4.9	165	31	200	22	6.3-7	6.3-7	PA66HS	Black (BK) ■	157-00237
OS170FT7LH	5.3	170	30	147	16	6.8-7.2	0.7-4.5	PA66	Black (BK) ■	157-0019

All dimensions in mm. Subject to technical changes.

#### Recommended Tools

Type		
	EVO7i	EVO0CUT
Page	57	57

Suitable for the following industries:



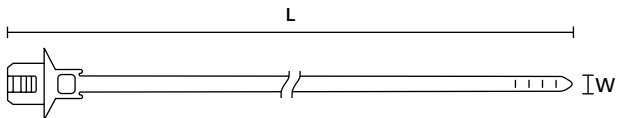
#### 1-Piece Fixing Ties with Fir Tree and Disc for Oval Holes

(Black and Grey)

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



DOP versions for oval holes features anti-twist protection



T50SOS2DOP

RoHS ✓

Type	Width (W)	Length (L)	Bundle Ø max.	N	Hole Ø (FH)	Material (p3)	Colour	Article-No.
T50SOSFT6D10E	4.6	163	32	180	5.8-6.2	PA66HS	Grey (GY) ■	157-00028
	4.6	163	32	225	5.8-6.2	PA46	Black (BK) ■	157-00045
T50SOSFT6LGE	4.6	163	35	225	8.0-8.5	PA66HS	Grey (GY) ■	157-00115
T50SOSFT6LGE-E2	4.6	163	35	225	8.0-8.5	PA66HS	Black (BK) ■	157-00072
T50SOSFT6E1	4.6	165	35	180	6.3-7	PA66HIRHS	Black (BK) ■	157-00228
T50SOSFT7-E	4.6	167	35	180	6.1-6.9	PA66HIRHS	Black (BK) ■	157-00242
FT220DP7	4.7	161.4	35	150	6.3-7	PA66HS	Black (BK) ■	157-00033
T50SOSFT6LGE-E4	4.7	165	30	225	6.8-7.2	PA66	Black (BK) ■	157-00185

All dimensions in mm. Subject to technical changes.

#### Recommended Tools

Type				
	TG008	MK10TEN	EVO7i	EVO0CUT
Page	57	57	57	57

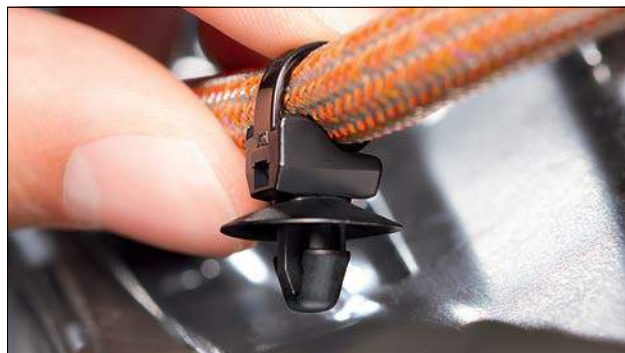
Suitable for the following industries:



### 1-Piece Fixing Ties with Arrowhead and Disc

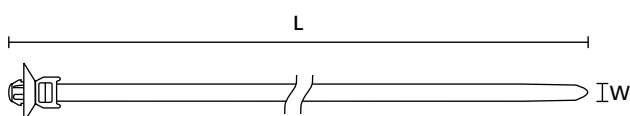
(Black and Beige)

- 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

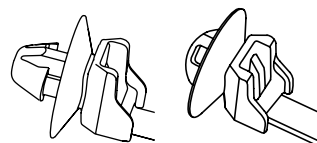


The Disc at the head of the T50SOSSFT6.5E protects the bore against dirt and splashes

### 1-Piece Fixing Ties with Arrowhead and Disc, for Round Holes



T50SOSKSFT5.4E



T50SOSSFT6.5E

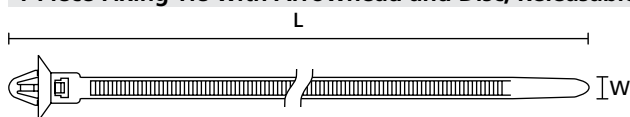
T50SOSKSFT6.5E

RoHS ✓

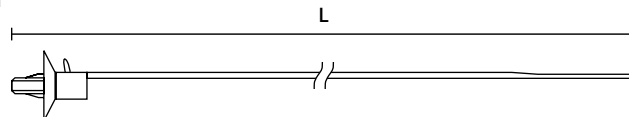
Type	Hole Ø (FH)	Panel Thickness	Width (W)	Length (L)	Bundle Ø max.	N	Disc Ø	Material (p3)	Article-No.
T50SOSKSFT5SE	4.8 - 5.2	0.7 - 1.3	4.6	156	35	180	16	PA66HS	126-00099
	4.8 - 5.2	0.7 - 1.3	4.6	156	35	180	16	PA66HS	126-00111
T50SOSKSFT5.4E	5.2 - 5.6	0.7 - 1.3	4.6	156	35	225	16	PA66HS	126-00075
T50SST5	6.1 - 6.5	0.7 - 1.5	4.6	170	31	225	16,2	PA66HS	126-00017
	6.1 - 6.5	0.7 - 1.5	4.6	170	31	225	16,2	PA66	126-02300
T50SOSKSFT6.5E	6.3 - 6.7	0.7 - 1.3	4.6	156	35	180	16	PA66HS	126-00081
PT2ASFT6.5PT0.7-1.5-E	6.3 - 6.7	0.7 - 1.5	3.4	112.7	20	230	16	PEEK	126-00183
T50SOSKSFT6.5S2-E	6.3 - 6.7	1.7 - 2.3	4.6	157.5	35	225	16	PA66HS	126-00086
T50SOSSFT6.5E	6.3 - 6.7	1.9 - 2.5	4.6	158.8	30	225	16	PA66HS	126-03102
T50SD6	6.3 - 7.5	0.6 - 1.8	5	160	31	200	18	PA66HS	111-85350
T30SOS-AS-SFT6.5-E	6.5 - 7	0.8 - 1.5	3.5	126.4	25	200	16	PA66HS	126-00255
T50MD7	6.8 - 7.2	0.8 - 2	5	225	59	225	16	PA66HS	111-85850
T50SL8	8	0.8 - 1.5	4.6	165	35	225	20	PA66	126-01900

All dimensions in mm. Subject to technical changes.

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



RT50SD6



RT50SD6

Type	Hole Ø (FH)	Panel Thickness	Width (W)	Length (L)	Bundle Ø max.	N	Disc Ø	Material (p3)	Colour	Article-No.
RT50SD6	6,3 - 7,5	0.6 - 1.8	5	160	31	225	18	PA66HS	Black (BK) ■	111-85480

All dimensions in mm. Subject to technical changes.

### Recommended Tools

Type	
	EV07i
Page	57

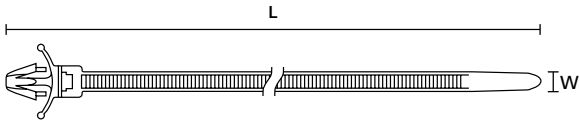
### Suitable for the following industries:



#### 1-Piece Fixing Ties with Arrowhead and Wings for Round Holes

(Black, Natural and Grey)

- Easy to assemble without the need for a tool
- Orientation of cable tie head always in defined position
- Arrowhead simply locks into place
- Supporting legs provide secure and firm fixing in confined spaces



1-Piece Fixing Ties with Arrowhead, with wings



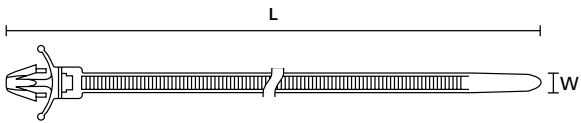
A wide range of arrowhead fixing ties which are suitable for different panel thicknesses and hole diameters

RoHS ✓

Type	Drawing	Width (W)	Length (L)	Bundle Ø max.	N	Hole Ø (FH)	Panel Thickness	Material (p3)	Colour	Article-No.
T18RSF		2.5	100	16	80	4.6-4.8	0.8-3.0	PA66HS	Natural (NT) ■	111-85519
		2.5	100	16	80	4.6-4.8	0.8-3.0	PA66W	Black (BK) ■	111-85560
T50SSL5		4.6	135	27	200	6.1-6.5	0.5-2.7	PA66HS	Black (BK) ■	126-02204
		4.6	135	27	225	6.1-6.5	0.5-2.7	PA46	Grey (GY) ■	111-85395
		4.6	135	27	225	6.1-6.5	0.5-2.7	PA66	Natural (NT) ■	111-85339
T50SL5		4.6	163	34	222	6.1-6.5	0.8-2.7	PA66HIRHS	Black (BK) ■	126-00005
		4.6	165	34	222	6.1-6.5	0.8-2.7	PA66	Natural (NT) ■	111-85369
T50SL6		4.6	165	34	225	6.3-7.5	0.5-2.5	PA66	Black (BK) ■	111-85460
T50SL7		4.6	165	34	225	6.9-7.1	0.8-2.5	PA66	Natural (NT) ■	111-85479
T50SL5		4.7	165	34	225	6.1-6.5	0.8-2.5	PA66HS	Black (BK) ■	126-00001
T50SSFm		4.6	160	35	225	6.0-6.6	0.7-3.0	PA66	Natural (NT) ■	111-85739
		4.6	160	35	225	6.0-6.6	0.7-3.0	PA66HS	Black (BK) ■	126-00032
		4.6	160	35	225	6.0-6.6	0.7-3.0	PA66HS	Natural (NT) ■	126-01104
T50RFm		4.7	205	45	225	6.0-6.6	0.7-3.0	PA66	Natural (NT) ■	111-85729
T50SAH		4.6	160	25.0	225.0	6.0-6.6	0.7-3.0	PA66HS	Natural (NT) ■	155-41102

All dimensions in mm. Subject to technical changes.

### 1-Piece Fixing Ties with Arrowhead and Wings, Releasable



1-Piece Fixing Ties with Arrowhead, with wings

Type	Drawing	Width (W)	Length (L)	Bundle Ø max.	N	Hole Ø (FH)	Panel Thickness	Material (p3)	Colour	Article-No.
RT50RSF		4.6	215	50	225	7.8-8.2	0.8-2.5	PA66	Black (BK) ■	115-07010
RT50SFK		5	225	50	225	6.4-7	0.8-3	PA66	Black (BK) ■	115-06960

All dimensions in mm. Subject to technical changes.

### 1-Piece fixing ties with arrowhead and wings, for oval holes

Type	Drawing	Width (W)	Length (L)	Bundle Ø max.	N	Hole Ø (FH)	Panel Thickness	Material (p3)	Colour	Article-No.
T80RFT6X12		4.6	228	45	222	6.3X12.3	0.8-3	PA46	Grey (GY) ■	150-48397
		4.6	228	45	222	6.3X12.3	0.8-3	PA66	Black (BK) ■	150-48396

All dimensions in mm. Subject to technical changes.

### Recommended Tools

Type				
	TG008	MK10TEN	EVO7i	EVO0CUT
Page	57	57	57	57

Suitable for the following industries:



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

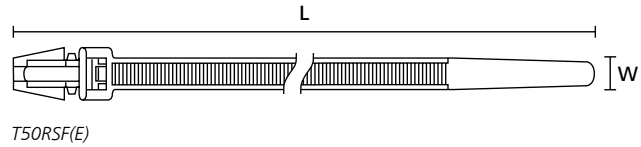
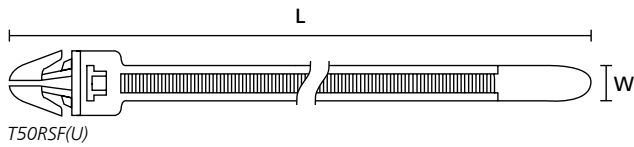
(Black and Natural)

- Suitable for confined spaces
- Areas with limited space
- Easy to assemble without the need for a tool
- Fixing tie with arrowhead without legs
- Arrowhead simply locks into place
- Orientation of cable tie head always in defined position



Arrowhead design allows these ties to be used in areas with limited space

RoHS ✓



Type	Width (W)	Length (L)	Bundle Ø max.	N	Hole Ø (FH)	Panel Thickness	Material (p3)	Colour	Article-No.
T30RSF(U)	3.6	158	31	136.0	4.7-5.5	0.8-2.1	PA66HS	Black (BK) ■	111-85610
	3.6	158	32	136.0	4.7-5.5	0.8-2.1	PA66	Natural (NT) ■	111-85603
T50RSF(E)	4.6	210	50	225.0	6.2-6.4	2.9-3	PA66	Natural (NT) ■	111-85799
	4.6	210	50	225.0	6.2-6.4	2.9-3	PA66	Black (BK) ■	126-01001

All dimensions in mm. Subject to technical changes.

#### Recommended Tools

Type				
	TG008	MK10TEN	EVO7i	EVO0CUT
Page	57	57	57	57

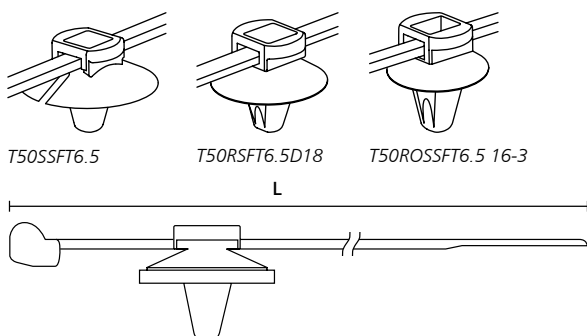
Suitable for the following industries:



### 2-Piece Fixing Ties with Arrowhead and Disc for Round Holes

(Black)

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

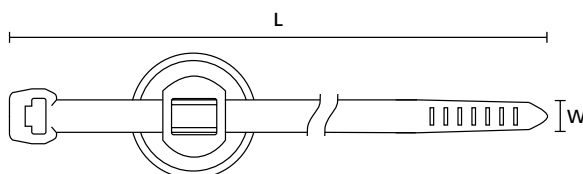


T50ROSSFT6.5-16-3



Being a 2-Piece assembly allows the tie head to be located in the most convenient position

RoHS



T50ROSSFT6.5-16-3

Type	Hole Ø (FH)	Panel Thickness	Width (W)	Length (L)	Bundle Ø max.	N	Disc Ø	Material Cable Tie	Material Foot Part	Article-No.
T50RSFT6.5	6.3 - 6.7	0.7 - 2.0	4.6	200	45	225	22.4	PA66HS	PA66HS	156-01697
T50OSSFT65162OD	6.3 - 6.7	1.5 - 2.2	4.6	150	35	225	16	PA66HS	PA66HIRHS	150-93130
T50ROSSFT6.5 16-3	6.3 - 6.7	2.5 - 3.5	4.6	200	45	225	16	PA66HS	PA66HIRHS	150-37791
T50RSFT6.5 16-3	6.3 - 6.7	2.5 - 3.5	4.6	200	49	222	16	PA66HS	PA66HIRHS	150-37792
T50RSFT6.5D18	6.5 - 6.8	0.4 - 1.6	4.6	200	45	200	18	PA66HS	PA66HIRHS	150-37691
T50RDHSFT6.5D18	6.5 - 6.8	0.4 - 1.6	4.7	210	45	225	18	PA66	PA46	156-01720

All dimensions in mm. Subject to technical changes.

#### Recommended Tools

Type				
	TG008	MK10TEN	EVO7i	EVO0CUT
Page	57	57	57	57

Suitable for the following industries:



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

(Black)

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

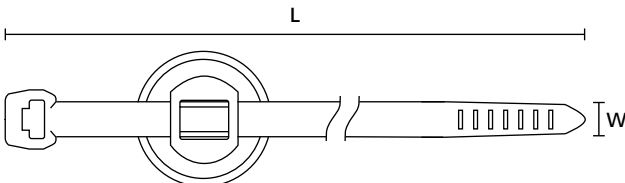
#### 2-Piece Fixing Ties with Arrowhead and Disc for Round Holes, Sealed

- Seal protects against splash water

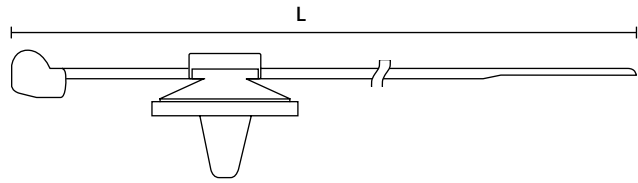


Additional seal protects against the ingress of moisture

RoHS ✓



T50ROSSFT6.5-16-2MOD-MD

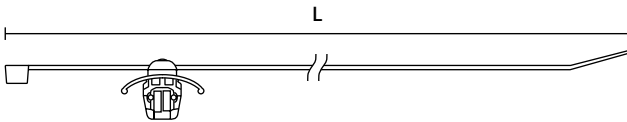


T50ROSSFT6.5-16-2MOD-MD

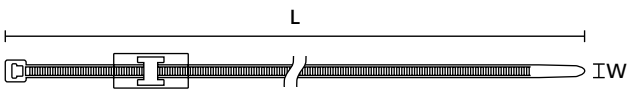
Type	Hole Ø (FH)	Panel Thickness	Width (W)	Length (L)	Bundle Ø max.	N	Disc Ø	Material Cable Tie	Material Foot Part	Article-No.
T50ROSSFT6.5 16-3MD	6.1 - 7.0	2.5 - 3.0	4.6	200	45	225	16	PA66HS	PA66HIRHS	150-37799
T50ROSSFT6.5-16-2-MD	6.3 - 6.7	0.7 - 1.2	4.6	200	45	225	16	PA66HS	PA66HIRHS	155-42002
T50ROSSFT6.5-D16-2 MD	6.4 - 6.6	0.7 - 2.0	4.6	200	45	222	22.4	PA66HS	PA66HIRHS	150-93100
T50RAHD6-MS-MD	6.5 - 7.0	0.7 - 1.2	4.6	202	50	225	18	PA66HS	PA66HS	156-01193

All dimensions in mm. Subject to technical changes.

#### 2-Piece Fixing Ties with Arrowhead and Disc for Oval Holes



T50RFT62x122



T50RFT62x122



T50RFT6OVAL for oval holes 6.3 x 12.2 mm

Type	Hole Ø (FH)	Panel Thickness	Width (W)	Length (L)	Bundle Ø max.	N	Material Cable Tie	Material Foot Part	Colour	Article-No.
T50RFT62x122HR	6.3 x 12.2	0.6 - 3.0	4.6	202	45	225	PA46	PA46	(GY) ■	156-00446
T50RFT6OVAL	6.3 x 12.2	0.6 - 3.0	4.6	202	45	355	PA66HS	PA66HIRHS	(BK) ■	150-37591

All dimensions in mm. Subject to technical changes.



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

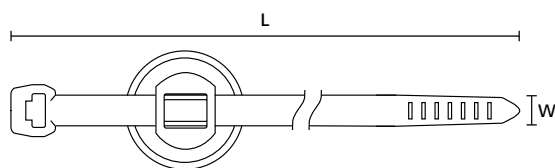
(Black)

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

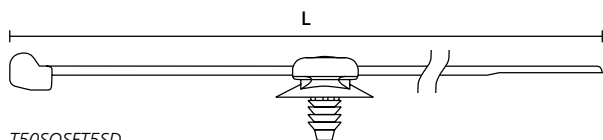


These Fir Tree Fixings can also be used in threaded, blind holes

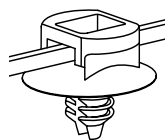
RoHS ✓



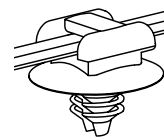
T50SOSFT5SD



T50SOSFT5SD



T30RFT5



T50SOSFT5SD

#### Fir Tree Parts FT3

Type	Hole Ø (FH)	Panel Thickness	Width (W)	Bundle Ø max.	N	Disc Ø	Material Cable Tie	Material Foot Part	Colour	Article-No.
T18RFT3	M3	1.5 - 3.0	2.5	20.0	80	13	PA66HSUV	PA66HSW	Black (BK) ■	156-00338

All dimensions in mm. Subject to technical changes.

#### Fir Tree Parts FT5

Type	Drawing	Hole Ø (FH)	Panel Thickness	Width (W)	Length (L)	Bundle Ø max.	N	Disc Ø	Material Cable Tie	Material Foot Part	Article-No.
T30RFT5		4.5 - 5	0.7 - 3	3.5	150	34	135	16	PA46	PA46	156-01316
		4.5 - 5	0.7 - 3	3.5	150	34	135	16	PA66HS	PA66HIRHS	150-55850
T50SOSFT5		4.5 - 5	0.7 - 3	4.6	150	31	225	16	PA66HS	PA66HIRHS	156-06200
T50RFT5		4.5 - 5	0.7 - 3	4.6	200	45	225	16	PA66HS	PA66HIRHS	156-00025
T18RFT5		4.5 - 5	0.7 - 3	2.5	100	22	80	16	PA66HS	PA66HIRHS	156-01225
T50SOSFT5SD		4.5 - 5	0.7 - 3	4.6	150	35	225	16	PA66HS	PA66HIRHS	156-00432

All dimensions in mm. Subject to technical changes.

#### Recommended Tools

Type				
	TG008	MK10TEN	EVO7i	EV0CUT
Page	57	57	57	57

Suitable for the following industries:



#### Fixing Ties for Weld Studs for Parallel Routing

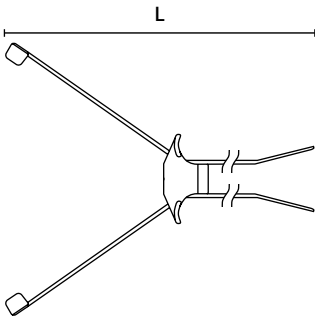
(Black)

- Separates cables to avoid abrasion
- Pre-assembled 2-Piece fixing tie with stud retainer
- For parallel routing of cables, hoses or harnesses
- Cable tie head can be moved after bundling
- Easy to install without the need for a tool
- For 5.0mm studs or 5.0mm ISO threaded studs

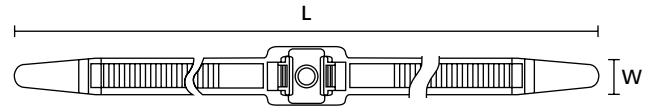


Parallel fixing of two cables

RoHS ✓



DSBS5



Dual Clamp Ties (DCT)

Type	Width (W)	Length (L)	Bundle Ø max.	N	Stud Ø	Material Cable Tie (p3)	Material Foot Part (p3)	Colour	Article-No.
T50SDSBS5	4.6	150	35	225	5	PA66HS	PA66HIRHS	Black (BK) ■	150-56193
T50ROSDSBS5	4.6	200	45	225	5	PA66HS	PA66HIRHS	Black (BK) ■	150-56199

All dimensions in mm. Subject to technical changes.

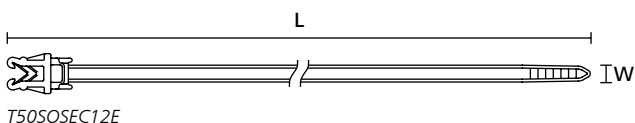
Suitable for the following industries:



### 1-Piece Fixing Ties for Edges

#### EdgeClip-Family (Black)

- Operating temperature -40°C to +105°C
- Easy assembly by hand
- For edges of 1-3mm or 3-6mm
- Integrated metal clamp holds clip firmly in place
- Clamp consists of double tempered steel spring
- Ideal for applications where holes or adhesives are not suitable



Pre-assembled 2-Piece fixing tie with EdgeClip



1-Piece fixing tie can be pushed easily on edges

RoHS ✓

Type	Drawing	Width (W)	Length (L)	Bundle Ø max.	N	Panel Thickness	Material (p3)	Colour	Article-No.
T50SOSEC12E		4.6	160	35	180	1-3	PA66HS	Black (BK) ■	148-00200
T50SOSEC13E		4.6	160	35	180	1-3	PA66HS	Black (BK) ■	126-00000
T40XEC55P-E		4	85	15	178	1-3	PA66HS	Black (BK) ■	133-00059
T50SOSEC34E		4.6	155	35	180	1-3	PA66HS	Black (BK) ■	126-00036
T50SOSEC20-E		4.6	161	35	180	3-6	PA66HS	Black (BK) ■	126-00235

All dimensions in mm. Subject to technical changes.

#### Recommended Tools

Type				
	TG008	MK10TEN	EVO7i	EVO CUT
Page	57	57	57	57

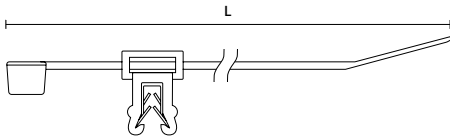
Suitable for the following industries:



## 2-Piece Fixing Ties for Edges: 1-3mm, Top Fixing

### EdgeClip-Family (Black)

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



Fixing Tie with EC4



2-Piece fixing tie fitted onto a plastic panel to hold a Ø 6mm harness

RoHS ✓

Type	Drawing	Width (W)	Length (L)	Bundle Ø max.	N	Material (p3)	Material Foot (p3)	Colour	Article-No.
T30REC4A		3.6	148	33	135	PA66HS	PA66HIRHS	Black (BK) ■	150-76090
T50SOSEC4A		4.6	150	35	225	PA66HS	PA66HIRHS	Black (BK) ■	150-76093
T50ROSEC4A		4.6	200	45	225	PA66HS	PA66HIRHS	Black (BK) ■	150-76099
T50ROSEC4A-W		4.6	200	45	225	PA66W	PA66W	Black (BK) ■	156-00570
T50REC4A		4.6	202	45	225	PA66HS	PA66HIRHS	Black (BK) ■	150-76091
T30REC4B		3.6	148	35	135	PA66HS	PA66HIRHS	Black (BK) ■	150-76080
T50SOSEC4B		4.6	150	35	225	PA66HS	PA66HIRHS	Black (BK) ■	156-00109
T50ROSEC4B		4.6	200	45	225	PA66HS	PA66HIRHS	Black (BK) ■	150-76079
T18REC10SD		2.5	100	22	80	PA66HS	PA66HIRHS	Black (BK) ■	155-38304
T50SOSEC10		4.6	150	31	225	PA66HS	PA66HIRHS	Black (BK) ■	156-00015
T50ROSEC10		4.6	200	45	225	PA66HS	PA66HIRHS	Black (BK) ■	156-05904
T18REC9SD		2.5	100	22	80	PA66HS	PA66HIRHS	Black (BK) ■	155-37104
T50SOSEC9SD		4.6	150	31	225	PA66HS	PA66HIRHS	Black (BK) ■	156-00019
T50ROSEC9		4.6	200	45	225	PA66HS	PA66HIRHS	Black (BK) ■	156-05903
T50REC9SD		4.6	200	45	225	PA66HS	PA66HIRHS	Black (BK) ■	150-01280
Q50REC4A		4.7	210	45	222	PA66W	PA66W	Black (BK) ■	156-01085
Q50REC4B		4.7	210	45	222	PA66W	PA66W	Black (BK) ■	156-01225

All dimensions in mm. Subject to technical changes.

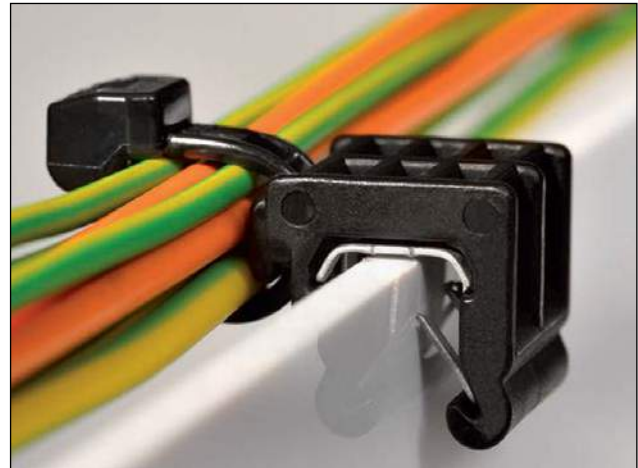
Suitable for the following industries:



## 2-Piece Fixing Ties for Edges: 1-3mm, Side Fixing

### EdgeClip-Family

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



Cable bundle runs parallel with the edge

RoHS

Type	Drawing	Width (W)	Length (L)	Bundle Ø max.	N	Material (p3)	Material Foot (p3)	Colour	Article-No.
T30REC5A		3.6	148	33	135	PA66HS	PA66HIRHS	Black (BK) ■	156-00003
T50SOSEC5A		4.6	150	31	225	PA66HS	PA66HIRHS	Black (BK) ■	150-40593
T50ROSEC5A		4.6	200	45	225	PA66HS	PA66HIRHS	Black (BK) ■	150-40591
T50SOSEC5B		4.6	150	31	135	PA66HS	PA66HIRHS	Black (BK) ■	156-40583
T50REC5B		2.5	200	45	225	PA66HS	PA66HIRHS	Black (BK) ■	150-40582
T50ROSEC5B		4.6	200	45	225	PA66HS	PA66HIRHS	Black (BK) ■	150-40581
T18REC21		4.6	100	18	80	PA66HS	PA66HIRHS	Black (BK) ■	156-01231
T50SOSEC21		4.6	150	35	225	PA66HS	PA66HIRHS	Black (BK) ■	150-00017
T50ROSEC21		4.6	200	45	225	PA66HS	PA66HIRHS	Black (BK) ■	155-300010
T50ROSEC22		4.6	200	45	225	PA66HS	PA66HIRHS	Black (BK) ■	156-00011
		4.6	200	45	225	PA66HS	PA66HIRHS	Black (BK) ■	156-00576
Q50REC5A		4.7	210	45	222	PA66W	PA66W	Black (BK) ■	156-01087
Q50REC5B		4.7	210	45	222	PA66W	PA66W	Black (BK) ■	156-01087

All dimensions in mm. Subject to technical changes.

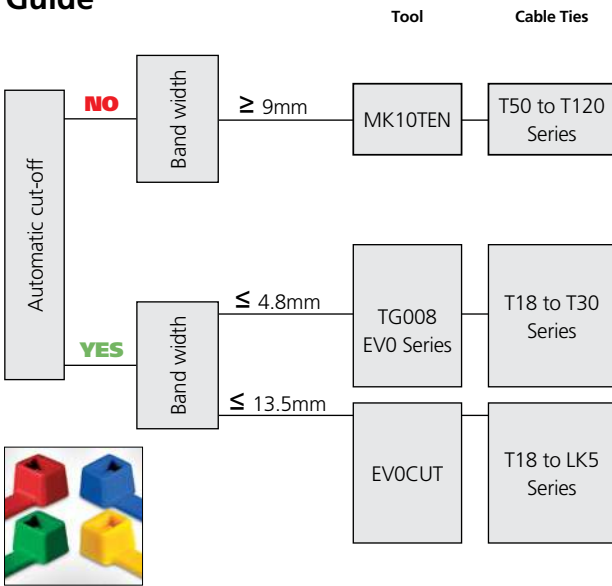
### Recommended Tools

Type				
	TG008	MK10TEN	EVO7i	EV0CUT
Page	57	57	57	57

Suitable for the following industries:



### Standard Nylon Cable Ties Selection Guide



### Steel Frame (Nylon)

#### MK10TEN



- Adjusting tensioning force
- Lightweight tool ideal for continuous use in high volume production
- **T18, T50** and **T120** series cable ties
- Maximum width of tie: 9.5mm
- Dimensions (mm): 190(L) x 95(H) x 30(W)
- Weight: 500g



Nylon cable tie tensioned and cut i.e. no sharp edges

### Steel Frame (Nylon)

#### TG008



- Adjusting tensioning force
- Lightweight tool ideal for continuous use in high volume production
- **T18, T30** and **T50** series cable ties
- Maximum width of tie: 4.8mm
- Dimensions (mm): 160(L) x 135(H) x 25(W)
- Weight: 300g



Nylon cable tie tensioned and cut i.e. no sharp edges

### Plastic Frame (Nylon)

#### EVO7i



- Adjustable preset tensioning tool
- Tensions and automatically cuts cable ties up to 4.8mm wide
- Extremely low maintenance
- Housing made of resilient and lightweight glass fibre-reinforced polyester MIL approved
- Dimensions: (mm): 191(L) x 33(W)
- Weight (g): 781



Nylon cable tie tensioned and cut i.e. no sharp edges

### Plastic Frame (Nylon)

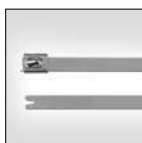
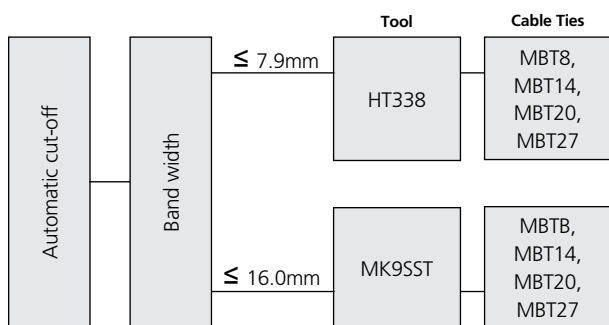
#### EVO CUT



RoHS ✓

- Cutting tool for nylon cable ties and fixing ties
- Prevents cable insulation from being damaged
- Cable tie can be cut off at any part of strap
- Single-handed operation
- Light-weighting plastic housing, ergonomic designed

### Standard Metal Cable Ties Selection Guide



### Plastic Frame (Stainless Steel)

**HT338**



- Fastens and automatically cut ties with adjustable bundling pressure
- Tension adjusting indicator
- Cable tie thickness up to 0.3mm. Width up to 7.9mm
- **MBT8, MBT14, MBT20** and **MBT27** cable ties



Stainless steel cable tie tensioned and cut i.e. no sharp edges

### Plastic Frame (Stainless Steel)

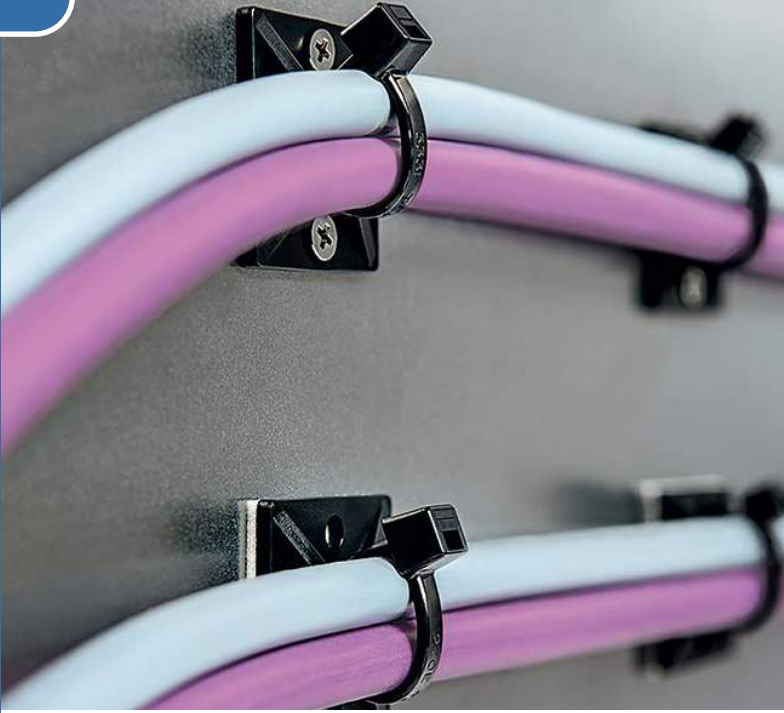
**MK9SST**



- Lightweight tool ideal for continuous use in high volume production
- MBT series cable ties
- Maximum width: 4.6 - 16mm
- Dimensions (mm): 190(L) x 150(H) x 40(W)
- Weight: 600g
- Spare blades: **HT338BLD, HT385RAT, SPMK9SST**



Stainless steel cable tie tensioned and cut i.e. no sharp edges



### 1.3 Cable Tie Mounts

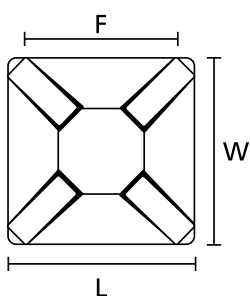
Cable Tie Mounts	
- Self-Adhesive (TY-Series) .....	60
- High Performance Adhesive (FlexTack-Series).....	61
- Screw Fixing Mounts (LKC-and NY-Series) .....	62
- Detectable Cable Tie Mounts (MCMB-Series) .....	63
- Arrowhead Cradles (SFC-Series) .....	64
 Bundling Clips	
- Bundling Clips with Arrowhead .....	65
- Bundling Clips - Various .....	66
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- Plastic P-Clips.....	74



### Self-Adhesive Cable Tie Mounts

#### TY-Series, PA66 (Black and Natural)

- Operating temperature -40°C to +85°C
- Screwable or self-adhesive versions
- Concave design to support larger diameter cables and bundles
- 2-way mounting base for safe guiding of cables and conduits
- Applications with minimal space
- Mounted before cable installation
- Used with standard cable ties



TY-Series: front view



TY-Series: side view



TY-Series mounts with rectangle design / screwable, self adhesive

HF ✓ RoHS ✓

**i** Locally manufactured

Type	Length (L)	Width (W)	Height (H)	Fixing Hole Ø (FH)	Strap Width max. (G)	Material (p3)	Colour	Adhesive	Article-No.
TY3BK	20	20	3.6	3	4	PA66	Black (BK) ■	Acrylic	151-01684
TY3NT	20	20	3.6	3	4	PA66	Natural (NT) ■	Acrylic	151-01686
TY8BK	30	30	4.4	4	8	PA66	Black (BK) ■	Acrylic	151-01688
TY8NT	30	30	4.4	4	8	PA66	Natural (NT) ■	Acrylic	151-01690

All dimensions in mm. Subject to technical changes.

### Recommended Cable Ties

Cable Tie Series	Cable Tie Mount
T18-T30	TY3
T50-T120	TY8

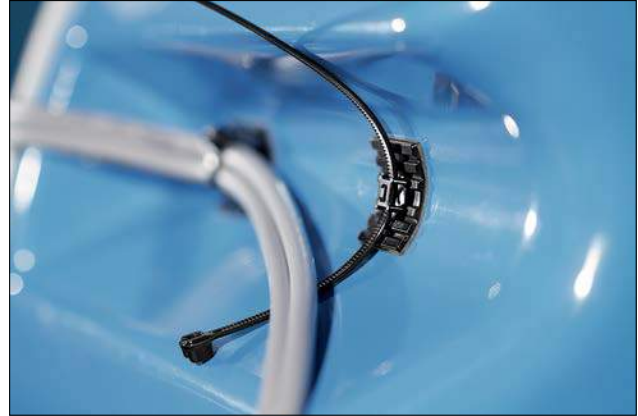
Suitable for the following industries:



### High Performance Cable Tie Mounts for Round and Angled Surfaces

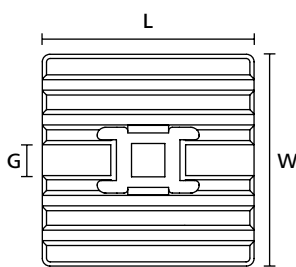
#### FlexTack-Series FMB, PA66HS (Black and White)

- Temperature resistance up to +105°C
- Flexible mount for round and angled surfaces
- Homogeneous system of acrylic adhesive
- Greater design freedom and offers uniform stress distribution along with weight reduction
- Adhesive with high cohesive strength
- Good weather resistance
- Innovative fixing solution for high (e.g. metal or glass) and low energy surfaces
- Protection foil with finger lift for easy peel
- Temperature resistance up to +105°C
- 4-Way entry for cable tie for quicker and more flexible installation

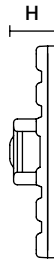


Flexible Cable tie mount (FlexTrack) in a concave application

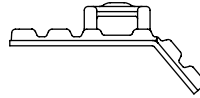
HF ✓ RoHS ✓



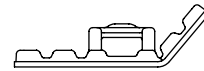
Flexible adhesive mount



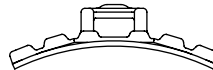
Flexible adhesive mount: side view



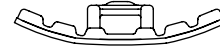
Flexible adhesive mount: Down angled, side view



Flexible adhesive mount: Up angled, side view



Flexible adhesive mount: Convex, side view



Flexible adhesive mount: Concave, side view

Type	Width (W)	Length (L)	Height (H)	Strap Width max. (G)	Material (p3)	Colour	Adhesive	Article-No.
FMB4APT-I	28	28	6.3	5.4	PA66HS	Black (BK) ■	Mod. Acrylic	151-01527
	28	28	6.3	5.4	PA66HS	White (WT) □	Mod. Acrylic	151-01528

All dimensions in mm. Subject to technical changes.

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

Suitable for the following industries:



### Screw Fixing Mounts

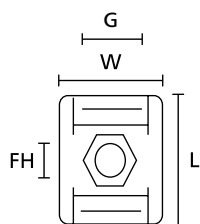
#### LKC- and NY-Series with Overlapping Curved Design

- Operating temperature -40°C to +85°C
- Curved design for additional cable support
- Simple to install with a screw or bolt
- Excellent security, particularly in areas of high vibration
- Wide variety of heavy duty cable ties up to 13mm width



Cable Tie Mounts LKC Series

RoHS ✓



NY3256: Side view



NY3256

Type	Drawing	Width (W)	Length (L)	Height (H)	Hole Ø (FH)	Strap Width max. (G)	Material (p3)	Colour	Article-No.
LKC		17	25	13.5	5.5	8	PA66	Black (BK) ■	151-27010
		17	25	13.5	5.5	8	PA66	Natural (NT) ■	151-27019
LKCSF1		19	40	16	6	13	PA66W	Black (BK) ■	151-01683
		19	40	16.8	6	13	PA66	Natural (NT) ■	151-27219
		19	40	16.8	6	13	PA66	Black (BK) ■	151-27202
NY3256		12	13.5	7.8	3.1	8	PA66	Natural (NT) ■	151-25219

All dimensions in mm. Subject to technical changes.

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

Suitable for the following industries:



EN 45545-2

#### Detectable Cable Tie Mounts

##### MCMB-Series, Screwable, PA66MP (Blue)

- Operating temperature -40°C to +85°C
- Distinctive blue colour for easy visual detection
- Simple to install with a screw or bolt
- Provides a secure fixing solution for routing cables, tubes and hoses
- 4-way entry for the cable tie leads to a quicker and more flexible installation
- Magnetic and X-Ray detectable, perfect for use with food and pharmaceutical grade detection equipment
- Total metal dispersion provides consistent detectability, even for small cut-off pieces
- Greatly reduces risk of contamination within food products
- Can support quality assurance in the production of food e.g. HACCP



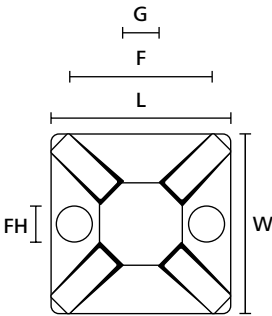
Detectable fixing solution containing of MCMB mount and MCT cable tie.



HF ✓ RoHS ✓



Ideally used with detectable cable ties (p39)



MCMB Mount



MCMB Mount: side view

Type	Width (W)	Length (L)	Height (H)	Fixing Hole Centres (F)	Hole Ø (FH)	Strap Width max. (G)	Material (p4)	Colour	Article-No.
MCMB3	19	19	3.8	13.2	3,1	3.5	PA66MP	Blue (BL) <span style="color: blue;">■</span>	151-01169
MCMB4	28	28	4.7	20.0	4	4.7	PA66MP	Blue (BL) <span style="color: blue;">■</span>	151-01170

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

Suitable for the following industries:



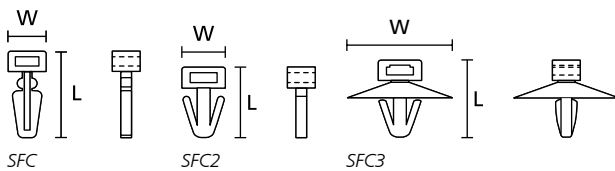
### Arrowhead Cradle

#### SFC-Series, PA66 (Black and Natural)

- Arrowhead fixing for use in pre-drilled or punched holes
- SFC and SFC2 for ties up to 5.3mm wide
- SFC3 for ties up to 8.6mm wide



The SFC3 series for securely fixing and to route cables and pipes.



Type	Hole Ø (FH)	Panel Thickness	Width (W)	Length (L)	Strap Width max. (G)	Material (p3)	Colour	Article-No.
SFC2	6	0.8 - 1	6	14.5	5.3	PA66	Natural (NT) ■	151-02000
SFC	6	3.0 - 3.2	11	18	5.3	PA66	Natural (NT) ■	151-01600
SFC3	6.3	0.8 - 1.8	22	15.5	8.6	PA66	Black (BK) ■	151-01907
	6.3	0.8 - 1.8	22	15.5	8.6	PA66	Natural (NT) ■	151-01909

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

Suitable for the following industries:



### Bundling Clips with Arrowhead

- Originally designed for Automotive industry
- Offer simple and easy methods of securing cables, hoses or pipes.
- Many applications within a wide range of industries.

Application		Description
  <p>Cables and leads can be fastened with a cable tie or adhesive tape to the bars of the mounting element.</p> <p>EC17 - Cables and leads can be fastened with adhesive tape to the bar of the mounting element.</p>	<p><b>Bundling Clips for Edges</b></p> <ul style="list-style-type: none"> <li>• Easy assembly, just shuffle manually</li> <li>• Designed for edges of 1 - 3 and 1.5 - 4 mm</li> <li>• Integrated metal clamp holds clip firmly in place</li> <li>• Clamp consists of double tempered steel spring</li> <li>• ATS fixing elements can be tied automatically with tools ATS3080, AT2000 or AT2000CPK</li> </ul>	
  <p>TCSB5CYCC: Tapebar, Stud Retainer and ConnectorClip in just one article.</p> <p>The slim line BC series is particularly compact and flexible.</p>	<p><b>Bundling Clips for Weld Studs, Moveable</b></p> <ul style="list-style-type: none"> <li>• Very flat bundling clip for 5 mm weld stud</li> <li>• Horizontal length tolerance compensation</li> <li>• Suitable for cables of reduced weight and diameter</li> </ul>	
  <p>Designed for defined distance of bundles to the hole.</p> <p>COW Clip used as tape-on clip.</p>	<p><b>Bundling clips for Round and Oval Holes</b></p> <ul style="list-style-type: none"> <li>• Easy to install without the need for a tool</li> <li>• One fir tree foot part can be used for a variety of panel thicknesses</li> <li>• Suitable for use within threaded holes</li> <li>• Holding tabs prevent the tie slipping sideways</li> <li>• Versions for oval holes feature anti-twist protection</li> </ul>	

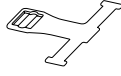
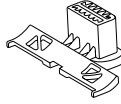
### Bundling Clips for Edges

RoHS ✓

Type	Drawing	Panel Thickness	Width (W)	Length (L)	Height (H)	Material (p3)	Colour	Article-No.
EC14		1 - 3	10	40	12.4	PA66HIRHS	Black (BK) ■	151-03404

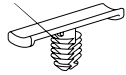
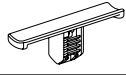
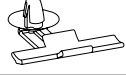
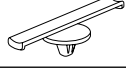

All dimensions in mm. Subject to technical changes.

### Bundling Clips for Weld Studs, Moveable

Type	Drawing	Stud Ø	Length (L)	Length (L2)	Material (p3)	Colour	Article-No.
BC30		5	55	30	PA66HIRHS	Black (BK) ■	151-00016
BCUWS5-D5-25		5	50	-	PA66HIRHS	Natural (NT) ■	151-00851

All dimensions in mm. Subject to technical changes.

### Bundling Clips for Round and Oval Holes

Type	Drawing	Hole Ø (FH)	Panel Thickness	Length (L)	Material (p3)	Colour	Article-No.
TC4FT6LG		6.3 - 7	0.6 - 5.1	37	PA66HIRHS	Black (BK) ■	151-00215
WICKELCLIP-VDS		6.3 x 9	0.6 - 2.5	40	PA66HIRHS	Black (BK) ■	155-16301
STAND-OFF-CLIP-2		6.5 - 6.8	0.4 - 1.6	40	PA66HIRHS	Black (BK) ■	155-01600
BCSFT6.5 16-3MD		6.3 - 6.7	1.5 - 3	55	PA66HIRHS	Black (BK) ■	155-11601
BCOWFT6M		6.5 - 7.0	0.6 - 3.5	27.3	PA66HIRHS	Natural (NT) ■	151-02227

All dimensions in mm. Subject to technical changes.

Suitable for the following industries:



Consult our Automotive Catalogue for additional variants



### Automatic Bundling

(Black and Grey)

- Optimised for use automatic cable tying systems
- Easy to apply
- The fixing elements can be tied automatically with Autotool 2000 family and Autotool System 3080



Fixing Elements for Automatic bundling.

#### Bundling Clips for Automatic Cable Tying Systems

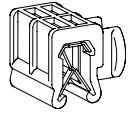
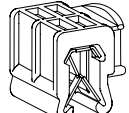
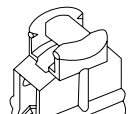
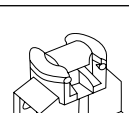
Type	Drawing	Panel Thickness	Hole Ø (FH)	Material (p3)	Colour	Article-No.
ATSBCEC35		1.5 - 4	-	PA66HIRHS	Black (BK) ■	102-68355
ATSBCSFT6.5		2.3 - 3.3	6.3 - 6.7	PA66HIRHS	Black (BK) ■	102-69066
ATSBCSFT6.5-MD		2 - 3	6.3 - 6.7	PA66HIRHS	Black (BK) ■	102-69065
ATSBCEC36		1.5 - 4	-	PA66HIRHS	Black (BK) ■	102-68365
ATSBCEC37		1.5 - 4	-	PA66HIRHS	Black (BK) ■	102-68375
ATSBCT6LG		0.6 - 5.1	6.3 - 7.0	PA66HIRHS	Black (BK) ■	102-67065
ATSBCEC38		1.5 - 4	-	PA66HSW	Black (BK) ■	102-68385
ATSBCKSFT6.5		0.7 - 1.3	6.3 - 6.7	PA66HIRHS	Black (BK) ■	102-69067
ATSBK2KSFT6.5		1.7 - 2.3	6.3 - 6.7	PA66HIRHS	Black (BK) ■	102-69068
ATSBKOWSFT6.5		2.3 - 3.3	6.3 - 6.7	PA46	Grey (GY) ■	102-69080
ATSBKCSFT6.5PT2.3-3.3		2.3 - 3.3	6.3 - 6.7	PA46	Grey (GY) ■	102-69089

Suitable for the following industries:



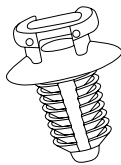
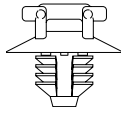
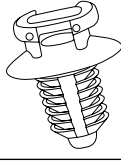
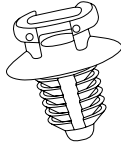


### EdgeClips for Automatic Cable Tying Systems

Type	Drawing	Panel Thickness	Material (p3)	Colour	Article-No.
ATSEC38		1.5 - 4	PA66HIRHS	Black (BK) ■	102-68380
ATSEC37		1.5 - 4	PA66HIRHS	Black (BK) ■	102-68370
ATSEC35		1.5 - 4	PA66HIRHS	Black (BK) ■	102-68350
ATSEC36		1.5 - 4	PA66HIRHS	Black (BK) ■	102-68360

All dimensions in mm. Subject to technical changes.

### Fir Tree Clips for Automatic Cable Tying Systems

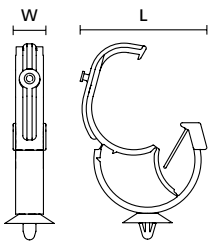
Type	Drawing	Hole Ø (FH)	Panel Thickness	Material (p3)	Colour	Article-No.
ATSFT5LG		4.5 - 5	0.7 - 8	PA66HIRHS	Black (BK) ■	102-67050
ATSFT6		6.3 - 7	0.8 - 3	PA66HIRHS	Black (BK) ■	102-67060
ATSFT6LG		6.5 - 7.1	0.6 - 6	PA66HIRHS	Black (BK) ■	102-67062
ATSFT8GSD		8 - 8.5	1.5 - 4	PA66HIRHS	Black (BK) ■	102-67081

All dimensions in mm. Subject to technical changes.

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

#### IAHC-Series, Connectable with Arrowhead (Black)

- Operating temperature -40°C to +105°C
- Push and click closure
- Coupling elements of the IAHC variants allow parts to interconnect
- Clip is clicked into a specific hole
- IAHC( )T can only be connected with another IAHC element



AHC( )AH



IAHC elements can be connected.

RoHS ✓

Type	Drawing	Hole Ø (FH)	Bundle Ø max.	Width (W)	Length (L)	Material (p3)	Colour	Article-No.
IAHC3AH		6.2 - 6.7	28	13.5	40	PA66HIRHS	Black (BK) ■	151-00378
IAHC4AH		6.2 - 6.7	36	13.5	53	PA66HIRHS	Black (BK) ■	151-00382
IAHC5BH		6.2 x 12.2	45	13.5	57	PA66HIRHS	Black (BK) ■	151-00384
IAHC3CH		6.2 x 12.2	28	10	47	PA66HIRHS	Black (BK) ■	151-00381
IAHC4CH		6.2 x 12.2	36	13.5	53	PA6HIRHS	Black (BK) ■	151-00383
IAHC3EH		6.2 x 12.2	28	13.5	44.5	PA66HIRHS	Black (BK) ■	151-00489
IAHC5FH		6.2 x 12.2	45	13.5	61.5	PA66HIRHS	Black (BK) ■	151-00787

All dimensions in mm. Subject to technical changes.

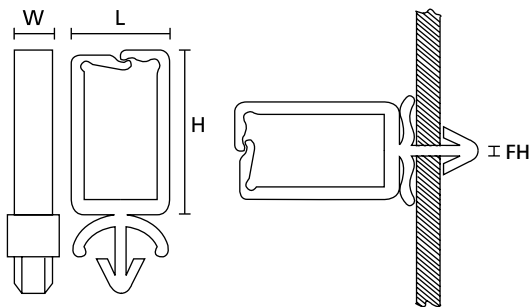
Suitable for the following industries:



### Wire Push in Clips

#### WPC-Series, PA66 (Natural)

- Accept single or multiple wires
- Simply push wires into place
- Self-locking to prevent accidental removal
- Arrowhead design for simple and secure installation
- Access to panel only needed from one side



WPC Wire Push In Clip (side view, front view, in application)



Wire Push In Clip

RoHS ✓

Type	Hole Ø (FH)	Panel Thickness	Width (W)	Length (L)	Height (H)	Material (p3)	Colour	Article-No.
WPC5	4.7	0.8 - 4	5.3	15	12.7	PA66	Natural (NT) ■	151-75059
WPC10	4.7	0.8 - 4	5.3	15	17.7	PA66	Natural (NT) ■	151-75109
WPC15	4.7	0.8 - 4	5.3	15	22.7	PA66	Natural (NT) ■	151-75159
WPC20	4.7	0.8 - 4	5.3	15	27.7	PA66	Natural (NT) ■	151-75209

All dimensions in mm. Subject to technical changes.

Suitable for the following industries:



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

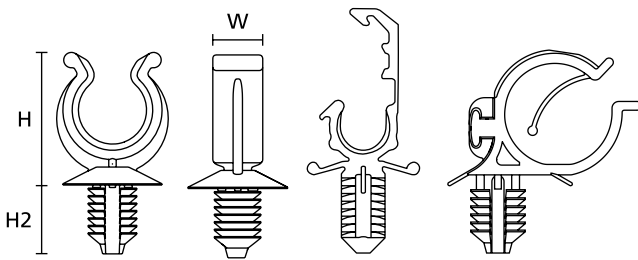
#### CTC and CNCTC-Series, PA66HIRHS (Black)

- CTC clamps for a variety of nominal diameters
- Fir tree foot part can be used for a variety of panel thicknesses
- Suitable for use within threaded holes
- Tube is guided accurately by clicking
- Axial slipping is prevented by the inside profile of the clamp



Tubing is clicked into CTC clamp and held firmly

RoHS ✓



CTC-Series

CNCTC8FT6.5LG CTCFT6

Type	Width (W)	Height (H)	Height (H2)	Hole Ø (FH)	Panel Thickness	Nominal Ø	Disc Ø	Material (p3)	Colour	Article-No.
CTC4.5FT6LG	8	16.1	11.1	6.5 - 7	0.8 - 6	4.5	16	PA66HIRHS	Black (BK) ■	151-14314
CTC7.5FT6LG	8	18.6	11.1	6.5 - 7	0.8 - 6	7.5	16	PA66HIRHS	Black (BK) ■	151-14313
CTC7.5FT9	8	19.9	12.2	8.7 - 9	3 - 5	7.5	23	PA66HIRHS	Black (BK) ■	155-31602
CTC10FT6	8	21.4	7.5	6.5 - 7	0.8 - 3	10	16	PA66HIRHS	Black (BK) ■	151-14311
CTC10FT6LG	8	21.4	11.1	6.5 - 7	0.8 - 6	10	16	PA66HIRHS	Black (BK) ■	151-00018
CTC10FT9	8	22.7	12.2	8.7 - 9	3 - 5	10	23	PA66HIRHS	Black (BK) ■	155-17801
CTC13FT6	8	25.2	7.5	6.5 - 7	0.8 - 3	13	16	PA66HIRHS	Black (BK) ■	151-14312
CTC13FT6LG	8	25.2	11.1	6.5 - 7	0.8 - 6	13	16	PA66HIRHS	Black (BK) ■	151-00019
CTC22FT9	8	37.7	12.2	8.7 - 9	3 - 5	22	23	PA66HIRHS	Black (BK) ■	155-25201
CTCL4.5FT6LG	10	14.3	10.7	6.5 - 7	0.8 - 6	4.5	16	PA66HIRHS	Black (BK) ■	151-01115

All dimensions in mm. Subject to technical changes.

#### CTCF

Type	Width (W)	Height (H)	Height (H2)	Hole Ø (FH)	Panel Thickness	Nominal Ø	Material (p3)	Colour	Article-No.
CTCF6	11	18.5	9.3	6.3 - 6.7	0.7 - 4.5	15	PA66HIRHS	Black (BK) ■	151-00783

#### CNCTC-Series with cover

Type	Width (W)	Height (H)	Height (H2)	Hole Ø (FH)	Panel Thickness	Nominal Ø	Material (p3)	Colour	Article-No.
CNCTC8FT6.5LG	10	11	11.4	6.5 - 6.7	1 - 6	7	PA66HIRHS	Black (BK) ■	151-01038
	10	11	11.4	6.5 - 6.7	1 - 6	7	PA66HIRHS	Blue (BL) ■	151-01177
LC9FTOVAL	10	37.7	13.2	6.2 x 12.2	0.6 - 6.8	-	PA66HIRHS	Black (BK) ■	151-01880

Suitable for the following industries:



### Fixing Elements for Weld Studs

#### SB- and CT-Series, PA66 (Black)

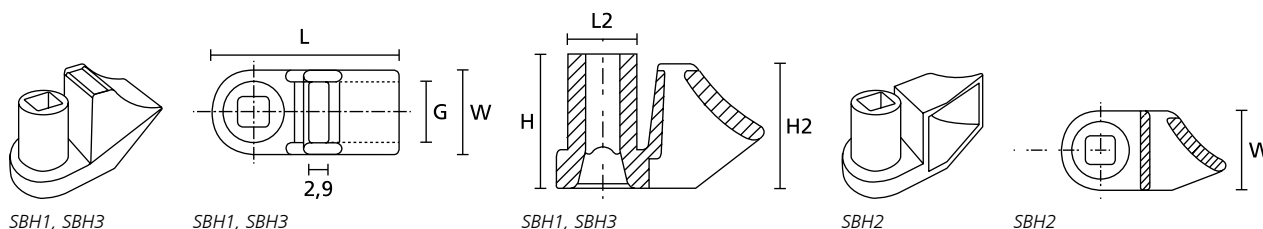
- Simple and quick method of fixing
- SBH types simply hammered onto the stud
- SBH1 and SBH3 allow cables to run across the panel
- SBH2 allow cables to run at 90° to the panel



SBH2 allow cables to run at 90° to panel

#### SB-Series

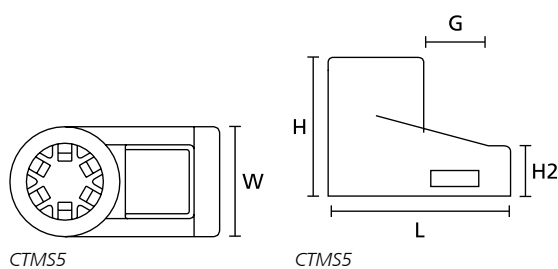
RoHS ✓



Type	Width (W)	Length (L)	Length (L2)	Height (H)	Height (H2)	Stud Ø	Strap Width max. (G)	Material (p3)	Colour	Article-No.
SBH1	12.5	26.8	9	13.9	15.9	5	8.5	PA66	Black (BK) ■	151-26150
SBH2	12.5	26.8	9	14	12.5	5	8.5	PA66	Black (BK) ■	151-26250
SBH3	12.5	26.8	9	18	15.9	5	8.5	PA66	Black (BK) ■	150-18900

All dimensions in mm. Subject to technical changes.

#### CT-Series



Type	Width (W)	Length (L)	Height (H)	Height (H2)	Stud Ø	Strap Width max. (G)	Material (p3)	Colour	Article-No.
CTMS5	10	19	14.5	5.3	5	5	PA66	Black (BK) ■	151-03301

All dimensions in mm. Subject to technical changes.

### Bundling Clips

#### TC- and CH-Series (Black)

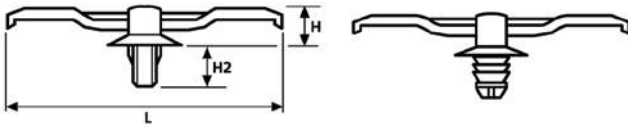
- Bundling of cables and cable looms
- Fastened onto winding bar with binding twine, adhesive tape or cable ties
- Various base geometries for wide variety of metal gauges and bore diameters
- Easy to install without the need for a tool
- Suitable for use within threaded holes
- Holding tabs prevent the tie slipping sideways
- Horizontal length tolerance compensation
- Oval holes feature anti-twist protection options available



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

RoHS ✓

**i** Locally manufactured

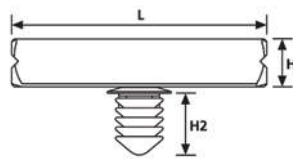


TapeClip CHA1

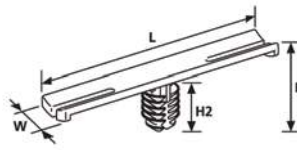
TapeClip CHA2



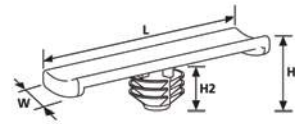
TapeClip CHDP66



TapeClip CHDP66



TapeClip TC2FT6LG



TapeClip TC5FT6S

Type	Length (L)	Width (W)	Height (H)	Height (H2)	Fixing Hole Ø (FH)	Panel Thickness min.	Panel Thickness max.	Material (p3)	Colour	Article-No.
CHA1	54	6	7.7	8.2	6.3-7	0.5	1.2	PA66HS	Black (BK) ■	150-08110
CHA2	54	6	7.7	8	6.5-7	0.8	2	PA66	Black (BK) ■	151-02901
TC2FT6LG	55	9	12.5	11	6.3-7	0.6	5.1	PA66HIRHS	Black (BK) ■	151-00020
TC5FT6S	37	8	8.2	5	6.5-7	0.75	1.5	PA66HIRHS	Black (BK) ■	150-95500
CHDP66	40	10	8.5	9.7	6.6	0.8	4.5	PA66	Black (BK) ■	151-01840

All dimensions in mm. Subject to technical changes.

Suitable for the following industries:



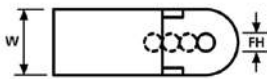
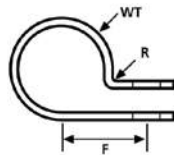
### Plastic P-Clips

#### NX-Series (Black and Natural)

- Operating temperature -40°C to +105°C, (+145°C, 500h)
- Good temperature resistance and high strength
- Wide range of sizes for every application
- permanent, or semi-permanent cable fixings
- Can be used without cable ties
- Natural available on request



P-Clip NX



P-Clip NX8-14

P-Clip H1P-H18P

Type	Bag Code	Width (W)	Wall (WT)	Fixing Hole Ø (FH)	Bundle Ø max.	Fixing Hole Centres (F)	Radius (R)	Material (p3)	Colour	Article-No.
<b>NX0</b>	<b>H1P</b>	10	0.8	4.2	3.2	8.5	0.5	PA66HS	Black (BK) ■	211-60000
<b>NX1</b>	<b>H2P</b>	10	1	4.2	5	9.5	1	PA66HS	Black (BK) ■	211-60001
<b>NX2</b>	<b>H3P</b>	10	1	4.2	6.5	10	1	PA66HS	Black (BK) ■	211-60002
<b>NX3</b>	<b>H4P</b>	10	1.2	4.2	8	10	1	PA66HS	Black (BK) ■	211-60003
<b>NX3WT</b>	<b>H4P</b>	10	1.2	4.2	8	10	1	PA66	Natural (NT) ■	211-60049
<b>NX4</b>	<b>H5P</b>	10	1.2	4.2	9.5	11	1	PA66HS	Black (BK) ■	211-60004
<b>NX5</b>	<b>H6P</b>	10	1.2	4.2	11	13	1	PA66HS	Black (BK) ■	211-60006
<b>NX6</b>	<b>H7P</b>	10	1.2	4.2	12.5	14	1.5	PA66HS	Black (BK) ■	211-60007
<b>NX8</b>	<b>NX8</b>	10	1.3	4.2	12.5	14	1.5	PA66	Black (BK) ■	211-60008
<b>NX11</b>	<b>NX11</b>	12.6	1.3	4.2	20	14	1.5	PA66	Black (BK) ■	211-60009

All dimensions in mm. Subject to technical changes.



**1.4 Ratchet P-Clamps**

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### Ratchet P-Clamp Features



### Ratchet P-Clamps

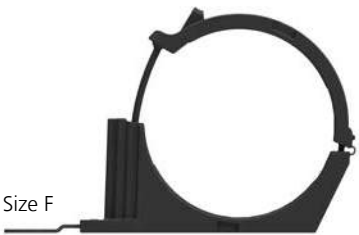


### Inline Ratchet P-Clamps



## Ratchet P-Clamp Family

### Size



### Angle/Length Variant



### Inline Ratchet P-Clamps



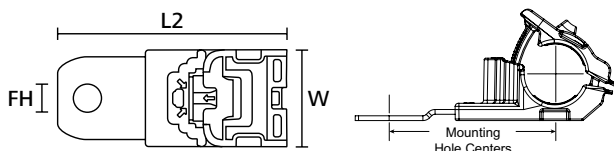
### Ratchet P-Clamps

#### Size A: Bundle Diameters 6.2 - 13.7mm (Black)

- Temperature -40°C to +105°C
- One-piece ratchet closure allows for easy installation by hand during pre- or final assembly
- Easy release feature simplifies quick adjustments and maintenance
- Impact modified, heat and UV stabilized PA66 provides long-term durability, indoors and out
- Zinc-plated steel mounting plate tolerates high torque and is treated to resist chemicals and salt spray
- Straight, 180° mounting plate is ideal for applications requiring a flush mount set off from the mounting hole
- Non-destructive easy release with a flat-head screwdriver, allows clamp to be reused, adjusted without removing or replacing any bolts or screws
- Flammability UL 94 HB



RoHS ✓



Type	Drawing	Angle/Length Variant	Length (L2) (mm)	Width (W) (mm)	N	Mounting Hole Centre (mm)	Mounting Hole Ø (FH) (mm)	Qty	Article-No.
RCA180SM6		180° Short	83.1	34.9	445.0	50.5	6.5	5	151-01670
		180° Short	83.1	34.9	445.0	50.5	6.5	30	151-03035
		180° Short	83.1	34.9	445.0	50.5	6.5	300	151-01637
180° Short		83.1	34.9	445.0	50.5	8.3	30	151-03036	
RCA180SM8		180° Short	83.1	34.9	445.0	50.5	8.3	300	151-01416
RCA180SM10		180° Short	83.1	34.9	445.0	50.5	10.3	300	151-01417
RCA180SM12	180° Short	83.1	34.9	445.0	50.5	13.0	300	151-01418	
RCA180MM6		180° Medium	105.1	34.9	445.0	72.5	6.5	200	151-01638
RCA180MM8		180° Medium	105.1	34.9	445.0	72.5	8.3	200	151-01419
RCA180MM10		180° Medium	105.1	34.9	445.0	72.5	10.3	200	151-01420
RCA180MM12		180° Medium	105.1	34.9	445.0	72.5	13.0	200	151-01421
RCA180LM6		180° Long	134.1	34.9	445.0	101.5	6.5	200	151-01639
RCA180LM8		180° Long	134.1	34.9	445.0	101.5	8.3	200	151-01422
RCA180LM10		180° Long	134.1	34.9	445.0	101.5	10.3	200	151-01423
RCA180LM12		180° Long	134.1	34.9	445.0	101.5	13.0	200	151-01424

Dimensions are approximate and subject to technical changes.

Suitable for the following industries:



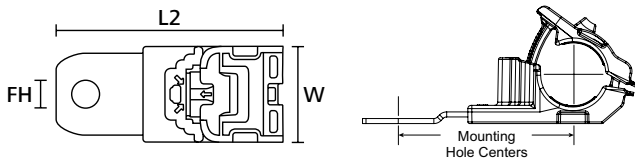
### Angled Ratchet P-Clamps

**Size A: Bundle Diameters 6.2 - 13.7mm (Black)**

- Temperature -40°C to +105°C
- One-piece ratchet closure allows for easy installation by hand during pre- or final assembly
- Easy release feature simplifies quick adjustments and maintenance
- Non-destructive easy release with a flat-head screwdriver, allows clamp to be reused, adjusted without removing or replacing any bolts or screws
- Impact modified, heat and UV stabilized PA66 provides long-term durability, indoors and out
- Zinc-plated steel mounting plate tolerates high torque and is treated to resist chemicals and salt spray
- Angled mounting plates are ideal for stacking RPCs or for avoiding obstructions or heat sources
- Flammability UL 94 HB
- Material: Polyamide 6.6 high impact modified, heat and UV stabilized (PA66HIRHSUV), Steel (ST), Zinc plated (ZN)



RoHS ✓



Type	Drawing	Angle/Length Variant	Length (L2) (mm)	Width (W) (mm)	N	Mounting Hole Centre (mm)	Mounting Hole Ø (FH) (mm)	Qty	Article-No.
RCA15SM6		15° Short	86.9	34.9	445.0	54.7	6.5	300	151-01640
RCA15SM8		15° Short	86.9	34.9	445.0	54.7	8.3	300	151-01425
RCA15SM10		15° Short	86.9	34.9	445.0	54.7	10.3	300	151-01426
RCA15SM12		15° Short	86.9	34.9	445.0	54.7	13.0	300	151-01427
RCA30SM6		30° Short	78.5	34.9	445.0	47.7	6.5	300	151-01641
RCA30SM8		30° Short	78.5	34.9	445.0	47.7	8.3	300	151-01428
RCA30SM10		30° Short	78.5	34.9	445.0	47.7	10.3	300	151-01429
RCA30SM12		30° Short	78.5	34.9	445.0	47.7	13.0	300	151-01430
RCA30LM6		30° Long	103.2	34.9	445.0	47.7	6.5	200	151-01642
RCA30LM8		30° Long	103.2	34.9	445.0	72.4	8.3	200	151-01431
RCA30LM10		30° Long	103.2	34.9	445.0	72.4	10.3	200	151-01432
RCA30LM12		30° Long	103.2	34.9	445.0	72.4	13.0	200	151-01433
RCA90SM6		90° Short	68.8	34.9	445.0	72.4	6.5	300	151-01643
RCA90SM8		90° Short	68.8	34.9	445.0	24.9	8.3	300	151-01434
RCA90SM10		90° Short	68.8	34.9	445.0	24.9	10.3	300	151-01435
RCA90SM12		90° Short	68.8	34.9	445.0	24.9	13.0	300	151-01436
RCA90LM6		90° Long	96.8	34.9	445.0	24.9	6.5	200	151-01644
RCA90LM8		90° Long	96.8	34.9	445.0	24.9	8.3	200	151-01437
RCA90LM10		90° Long	96.8	34.9	445.0	24.9	10.3	200	151-01438
RCA90LM12		90° Long	96.8	34.9	445.0	24.9	13.0	200	151-01439

Dimensions are approximate and subject to technical changes.



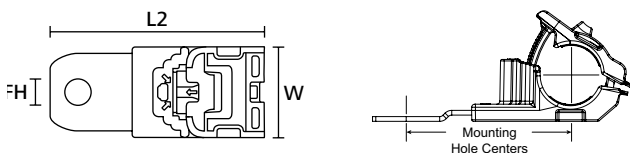
### Ratchet P-Clamps

#### Size B: Bundle Diameters 12.7 - 19.5mm (Black)

- Temperature -40°C to +105°C
- One-piece ratchet closure allows for easy installation by hand during pre- or final assembly
- Easy release feature simplifies quick adjustments and maintenance
- Impact modified, heat and UV stabilized PA66 provides long-term durability, indoors and out
- Zinc-plated steel mounting plate tolerates high torque and is treated to resist chemicals and salt spray
- Straight, 180° mounting plate is ideal for applications requiring a flush mount set off from the mounting hole
- Non-destructive easy release with a flat-head screwdriver, allows clamp to be reused, adjusted without removing or replacing any bolts or screws
- Flammability UL 94 HB
- Material: Polyamide 6.6 high impact modified, heat and UV stabilized (PA66HIRHSUV), Steel (ST), Zinc plated (ZN)



RoHS ✓



Type	Drawing	Angle/Length Variant	Length (L2) (mm)	Width (W) (mm)	N	Mounting Hole Centre (mm)	Mounting Hole Ø (FH) (mm)	Qty	Article-No.
RCB180SM6		180° Short	83.1	34.9	445.0	52.8	6.5	5	151-01671
		180° Short	83.1	34.9	445.0	52.8	6.5	20	151-03038
		180° Short	83.1	34.9	445.0	52.8	6.5	280	151-01645
RCB180SM8		180° Short	83.1	34.9	445.0	52.8	8.3	20	151-03039
		180° Short	83.1	34.9	445.0	52.8	8.3	280	151-01440
RCB180SM10		180° Short	83.1	34.9	445.0	52.8	10.3	20	151-03037
		180° Short	83.1	34.9	445.0	52.8	10.3	280	151-01390
RCB180SM12		180° Short	83.1	34.9	445.0	52.8	13.0	280	151-01441
RCB180MM6		180° Medium	105.1	34.9	445.0	74.8	6.5	200	151-01646
RCB180MM8		180° Medium	105.1	34.9	445.0	74.8	8.3	200	151-01442
RCB180MM10		180° Medium	105.1	34.9	445.0	74.8	10.3	200	151-01443
RCB180MM12		180° Medium	105.1	34.9	445.0	74.8	13.0	200	151-01444
RCB180LM6		180° Long	134.1	34.9	445.0	103.8	6.5	200	151-01647
RCB180LM8		180° Long	134.1	34.9	445.0	103.8	8.3	200	151-01445
RCB180LM10		180° Long	134.1	34.9	445.0	103.8	10.3	200	151-01446
RCB180LM12		180° Long	134.1	34.9	445.0	103.8	13.0	200	151-01447

Dimensions are approximate and subject to technical changes.

Suitable for the following industries:



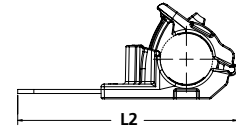
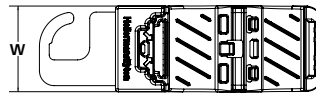
#### Series 6 Ratchet P-Clamp Solar Hangers

##### Series 6 RPC Hanger

- Temperature -40°C to +105°C
- Impact modified, heat and UV stabilized PA66 provides long-term durability in solar applications
- One-piece ratchet closure design allows for easy installation by hand during pre- or final assembly on First Solar Modules
- Integrated release feature allows for quick adjustments and maintenance
- First Solar specific steel mounting hanger tolerates high torque and is chemicals resistant
- Non-destructive easy release with a flat-head screwdriver, allows clamp to be reused, adjusted without removing it
- Adjustable clamp can be closed by hand to desired diameter, replacing multiple sizes of fixed diameter fasteners
- Flammability UL 94 HB
- Material: Polyamide 6.6 high impact modified, heat and UV stabilized (PA66HIRHSUV), Zinc plated (ZN)



RoHS ✓



##### Size B: Series 6 RPC Hanger for Bundle Diameters 12.7 - 19.5mm

Type	Min. Bundle Diameter (mm)	Max. Bundle Diameter (mm)	Length (L2) (mm)	Width (W) (mm)	N	Mounting Hole Ø (FH) (mm)	Qty	Article-No.
RCBHANGER	12.7	19.5	81.7	34.9	445.0	5.6	280	151-02875

Dimensions are approximate and subject to technical changes.

##### Size C: Series 6 RPC Hanger for Bundle Diameters 19.4 - 36.0mm



RoHS ✓

Type	Min. Bundle Diameter (mm)	Max. Bundle Diameter (mm)	Length (L2) (mm)	Width (W) (mm)	N	Mounting Hole Ø (FH) (mm)	Qty	Article-No.
RCCHANGER	19.4	36.0	101.7	34.9	445.0	5.6	160	151-03057

Dimensions are approximate and subject to technical changes.

Suitable for the following industries:



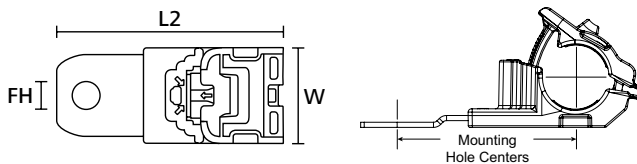
### Angled Ratchet P-Clamps

**Size B: Bundle Diameters 12.7 - 19.5mm (Black)**

- Temperature -40°C to +105°C
- One-piece ratchet closure allows for easy installation by hand during pre- or final assembly
- Easy release feature simplifies quick adjustments and maintenance
- Impact modified, heat and UV stabilized PA66 provides long-term durability, indoors and out
- Zinc-plated steel mounting plate tolerates high torque and is treated to resist chemicals and salt spray
- Angled mounting plates are ideal for stacking RPCs or for avoiding obstructions or heat sources
- Non-destructive easy release with a flat-head screwdriver, allows clamp to be reused, adjusted without removing or replacing any bolts or screws
- Flammability UL 94 HB
- Material: Polyamide 6.6 high impact modified, heat and UV stabilized (PA66HIRHSUV), Steel (ST), Zinc plated (ZN)



RoHS ✓



Type	Drawing	Angle/Length Variant	Length (L2) (mm)	Width (W) (mm)	N	Mounting Hole Centre (mm)	Mounting Hole Ø (FH) (mm)	Qty	Article-No.
RCB15SM6		15° Short	86.9	34.9	445.0	56.5	6.5	280	151-01648
RCB15SM8		15° Short	86.9	34.9	445.0	56.5	8.3	280	151-01448
RCB15SM10		15° Short	86.9	34.9	445.0	56.5	10.3	280	151-01449
RCB15SM12		15° Short	86.9	34.9	445.0	56.5	13.0	280	151-01450
RCB30SM6		30° Short	78.5	34.9	445.0	48.8	6.5	280	151-01649
RCB30SM8		30° Short	78.5	34.9	445.0	48.8	8.3	280	151-01451
RCB30SM10		30° Short	78.5	34.9	445.0	48.8	10.3	280	151-01452
RCB30SM12		30° Short	78.5	34.9	445.0	48.8	13.0	280	151-01453
RCA30LM6		30° Long	103.2	34.9	445.0	73.5	6.5	200	151-01650
RCA30LM8		30° Long	103.2	34.9	445.0	73.5	8.3	200	151-01454
RCA30LM10		30° Long	103.2	34.9	445.0	73.5	10.3	200	151-01455
RCA30LM12		30° Long	103.2	34.9	445.0	73.5	13.0	200	151-01456
RCA90SM6		90° Short	68.8	34.9	445.0	26.7	6.5	280	151-01651
RCA90SM8		90° Short	68.8	34.9	445.0	26.7	8.3	280	151-01457
RCA90SM10		90° Short	68.8	34.9	445.0	26.7	10.3	280	151-01458
RCA90SM12		90° Short	68.8	34.9	445.0	26.7	13.0	280	151-01459
RCA90LM6		90° Long	96.8	34.9	445.0	26.7	6.5	200	151-01652
RCA90LM8		90° Long	96.8	34.9	445.0	26.7	8.3	200	151-01460
RCA90LM10		90° Long	96.8	34.9	445.0	26.7	10.3	200	151-01461
RCA90LM12		90° Long	96.8	34.9	445.0	26.7	13.0	200	151-01462

Dimensions are approximate and subject to technical changes.



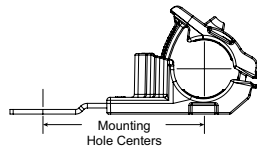
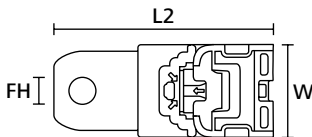
### Ratchet P-Clamps

**Size C: Bundle Diameters 19.4 - 36.0mm (Black)**

- Temperature -40°C to +105°C
- One-piece ratchet closure allows for easy installation by hand during pre- or final assembly
- Easy release feature simplifies quick adjustments and maintenance
- Impact modified, heat and UV stabilized PA66 provides long-term durability, indoors and out
- Zinc-plated steel mounting plate tolerates high torque and is treated to resist chemicals and salt spray
- Straight, 180° mounting plate is ideal for applications requiring a flush mount set off from the mounting hole
- Non-destructive easy release with a flat-head screwdriver, allows clamp to be reused, adjusted without removing or replacing any bolts or screws
- Flammability UL 94 HB
- Material: Polyamide 6.6 high impact modified, heat and UV stabilized (PA66HIRHSUV), Steel (ST), Zinc plated (ZN)



RoHS ✓



Type	Drawing	Angle/Length Variant	Length (L2) (mm)	Width (W) (mm)	N	Mounting Hole Centre (mm)	Mounting Hole Ø (FH) (mm)	Qty	Article-No.
RCC180SM6		180° Short	103.0	34.9	445.0	62.3	6.5	5	151-01672
		180° Short	103.0	34.9	445.0	62.3	6.5	20	151-03041
		180° Short	103.0	34.9	445.0	62.3	6.5	280	151-01653
RCC180SM8		180° Short	103.0	34.9	445.0	62.3	8.3	20	151-01474
RCC180SM10		180° Short	103.0	34.9	445.0	62.3	10.3	280	151-03040
RCC180SM12		180° Short	103.0	34.9	445.0	62.3	10.3	20	151-01475
RCC180SM12		180° Short	103.0	34.9	445.0	62.3	13.0	280	151-01476
RCC180MM6		180° Medium	125.0	34.9	445.0	84.3	6.5	200	151-01654
RCC180MM8		180° Medium	125.0	34.9	445.0	84.3	8.3	200	151-01477
RCC180MM10		180° Medium	125.0	34.9	445.0	84.3	10.3	200	151-01478
RCC180MM12		180° Medium	125.0	34.9	445.0	84.3	13.0	200	151-01479
RCC180LM6		180° Long	154.0	34.9	445.0	113.3	6.5	140	151-01655
RCC180LM8		180° Long	154.0	34.9	445.0	113.3	8.3	140	151-01480
RCC180LM10		180° Long	154.0	34.9	445.0	113.3	10.3	140	151-01481
RCC180LM12		180° Long	154.0	34.9	445.0	113.3	13.0	140	151-01482

Dimensions are approximate and subject to technical changes.

Suitable for the following industries:





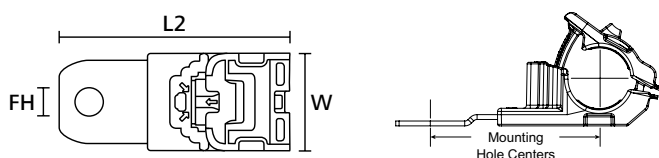
### Angled Ratchet P-Clamps

**Size C: Bundle Diameters 19.4 - 36.0mm (Black)**

- Temperature -40°C to +105°C
- One-piece ratchet closure allows for easy installation by hand during pre- or final assembly
- Easy release feature simplifies quick adjustments and maintenance
- Impact modified, heat and UV stabilized PA66 provides long-term durability, indoors and out
- Zinc-plated steel mounting plate tolerates high torque and is treated to resist chemicals and salt spray
- Angled mounting plates are ideal for stacking RPCs or for avoiding obstructions or heat sources
- Non-destructive easy release with a flat-head screwdriver, allows clamp to be reused, adjusted without removing or replacing any bolts or screws
- Flammability UL 94 HB
- Material: Polyamide 6.6 high impact modified, heat and UV stabilized (PA66HIRHSUV), Steel (ST), Zinc plated (ZN)



RoHS ✓



Type	Drawing	Angle/Length Variant	Length (L2) (mm)	Width (W) (mm)	N	Mounting Hole Centre (mm)	Mounting Hole Ø (FH) (mm)	Qty	Article-No.
RCC15SM6		15° Short	103.5	34.9	445.0	62.3	6.5	160	151-01648
RCC15SM8		15° Short	103.5	34.9	445.0	62.3	8.3	160	151-01448
RCC15SM10		15° Short	103.5	34.9	445.0	62.3	10.3	160	151-01449
RCC15SM12		15° Short	103.5	34.9	445.0	62.3	13.0	160	151-01450
RCC30SM6		30° Short	90.2	34.9	445.0	50.5	6.5	160	151-01649
RCC30SM8		30° Short	90.2	34.9	445.0	50.5	8.3	160	151-01451
RCC30SM10		30° Short	90.2	34.9	445.0	50.5	10.3	160	151-01452
RCC30SM12		30° Short	90.2	34.9	445.0	50.5	13.0	160	151-01453
RCC30LM6		30° Long	114.9	34.9	445.0	75.2	6.5	140	151-01650
RCC30LM8		30° Long	114.9	34.9	445.0	75.2	8.3	140	151-01454
RCC30LM10		30° Long	114.9	34.9	445.0	75.2	10.3	140	151-01455
RCC30LM12		30° Long	114.9	34.9	445.0	75.2	13.0	140	151-01456
RCC90SM6		90° Short	101.2	34.9	445.0	39.9	6.5	140	151-01651
RCC90SM8		90° Short	101.2	34.9	445.0	39.9	8.3	140	151-01457
RCC90SM10		90° Short	101.2	34.9	445.0	39.9	10.3	140	151-01458
RCC90SM12		90° Short	101.2	34.9	445.0	39.9	13.0	140	151-01459
RCC90LM6		90° Long	129.2	34.9	445.0	39.9	6.5	140	151-01652
RCC90LM8		90° Long	129.2	34.9	445.0	39.9	8.3	140	151-01460
RCC90LM10		90° Long	129.2	34.9	445.0	39.9	10.3	140	151-01461
RCC90LM12		90° Long	129.2	34.9	445.0	39.9	13.0	140	151-01462

Dimensions are approximate and subject to technical changes.



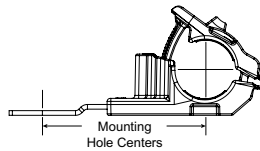
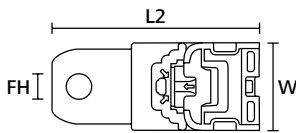
### Ratchet P-Clamps

**Size D: Bundle Diameters 36.0 - 51.0mm (Black)**

- Temperature -40°C to +105°C
- One-piece ratchet closure allows for easy installation by hand during pre- or final assembly
- Easy release feature simplifies quick adjustments and maintenance
- Impact modified, heat and UV stabilized PA66 provides long-term durability, indoors and out
- Zinc-plated steel mounting plate tolerates high torque and is treated to resist chemicals and salt spray
- Straight, 180° mounting plate is ideal for applications requiring a flush mount set off from the mounting hole
- Non-destructive easy release with a flat-head screwdriver, allows clamp to be reused, adjusted without removing or replacing any bolts or screws
- Flammability UL 94 HB
- Material: Polyamide 6.6 high impact modified, heat and UV stabilized (PA66HIRHSUV), Steel (ST), Zinc plated (ZN)



RoHS ✓



Type	Drawing	Angle/Length Variant	Length (L2) (mm)	Width (W) (mm)	N	Mounting Hole Centre (mm)	Mounting Hole Ø (FH) (mm)	Qty	Article-No.	
RCD180SM6		180° Short	115.5	34.9	445.0	70.0	6.5	3	151-01673	
		180° Short	115.5	34.9	445.0	70.0	6.5	20	151-03043	
		180° Short	115.5	34.9	445.0	70.0	6.5	160	151-01661	
RCD180SM8		180° Short	115.5	34.9	445.0	70.0	8.3	20	151-03044	
		180° Short	115.5	34.9	445.0	70.0	8.3	160	151-01499	
RCD180SM10		180° Short	103.0	34.9	445.0	70.0	10.3	20	151-03042	
		180° Short	115.5	34.9	445.0	70.0	10.3	160	151-01501	
RCD180SM12		180° Short	115.5	34.9	445.0	70.0	13.0	160	151-01502	
RCD180MM6			180° Medium	137.5	34.9	445.0	92.0	6.5	140	151-01662
RCD180MM8			180° Medium	137.5	34.9	445.0	92.0	8.3	140	151-01503
RCD180MM10			180° Medium	137.5	34.9	445.0	92.0	10.3	140	151-01504
RCD180MM12			180° Medium	137.5	34.9	445.0	92.0	13.0	140	151-01505
RCD180LM6		180° Long	166.5	34.9	445.0	121.0	6.5	140	151-01663	
RCD180LM8		180° Long	166.5	34.9	445.0	121.0	8.3	140	151-01506	
RCD180LM10		180° Long	166.5	34.9	445.0	121.0	10.3	140	151-01507	
RCD180LM12		180° Long	166.5	34.9	445.0	121.0	13.0	140	151-01508	

Dimensions are approximate and subject to technical changes.

Suitable for the following industries:



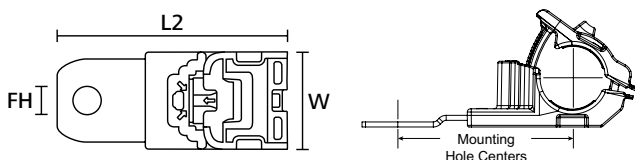
### Angled Ratchet P-Clamps

**Size D: Bundle Diameters 36.0 - 51.0mm (Black)**

- Temperature -40°C to +105°C
- One-piece ratchet closure allows for easy installation by hand during pre- or final assembly
- Easy release feature simplifies quick adjustments and maintenance
- Impact modified, heat and UV stabilized PA66 provides long-term durability, indoors and out
- Zinc-plated steel mounting plate tolerates high torque and is treated to resist chemicals and salt spray
- Angled mounting plates are ideal for stacking RPCs or for avoiding obstructions or heat sources
- Non-destructive easy release with a flat-head screwdriver, allows clamp to be reused, adjusted without removing or replacing any bolts or screws
- Flammability UL 94 HB
- Material: Polyamide 6.6 high impact modified, heat and UV stabilized (PA66HIRHSUV), Steel (ST), Zinc plated (ZN)



RoHS ✓



Type	Drawing	Angle/Length Variant	Length (L2) (mm)	Width (W) (mm)	N	Mounting Hole Centre (mm)	Mounting Hole Ø (FH) (mm)	Qty	Article-No.
RCD15SM6		15° Short	115.9	34.9	445.0	69.1	6.5	160	151-01648
RCD15SM8		15° Short	115.9	34.9	445.0	69.1	8.3	160	151-01448
RCD15SM10		15° Short	115.9	34.9	445.0	69.1	10.3	160	151-01449
RCD15SM12		15° Short	115.9	34.9	445.0	69.1	13.0	160	151-01450
RCD30SM6		30° Short	102.4	34.9	445.0	55.9	6.5	160	151-01649
RCD30SM8		30° Short	102.4	34.9	445.0	55.9	8.3	160	151-01451
RCD30SM10		30° Short	102.4	34.9	445.0	55.9	10.3	160	151-01452
RCD30SM12		30° Short	102.4	34.9	445.0	55.9	13.0	160	151-01453
RCC30LM6		30° Long	127.0	34.9	445.0	80.5	6.5	140	151-01650
RCC30LM8		30° Long	127.0	34.9	445.0	80.5	8.3	140	151-01454
RCC30LM10		30° Long	127.0	34.9	445.0	80.5	10.3	140	151-01455
RCC30LM12		30° Long	127.0	34.9	445.0	80.5	13.0	140	151-01456
RCC90SM6		90° Short	88.7	34.9	445.0	42.4	6.5	160	151-01651
RCC90SM8		90° Short	88.7	34.9	445.0	42.4	8.3	160	151-01457
RCC90SM10		90° Short	88.7	34.9	445.0	42.4	10.3	160	151-01458
RCC90SM12		90° Short	88.7	34.9	445.0	42.4	13.0	160	151-01459
RCC90LM6		90° Long	116.7	34.9	445.0	42.4	6.5	140	151-01652
RCC90LM8		90° Long	116.7	34.9	445.0	42.4	8.3	140	151-01460
RCC90LM10		90° Long	116.7	34.9	445.0	42.4	10.3	140	151-01461
RCC90LM12		90° Long	116.7	34.9	445.0	42.4	13.0	140	151-01462

Dimensions are approximate and subject to technical changes.



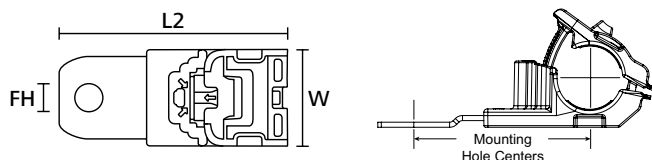
### Stainless Steel Ratchet P-Clamps

#### Size A: Bundle Diameters 6.2 - 13.7mm (Black)

- Temperature -40°C to +105°C
- One-piece ratchet closure allows for easy installation by hand during pre- or final assembly
- Easy release feature simplifies quick adjustments and maintenance
- Impact modified, heat and UV stabilized PA66 provides long-term durability, indoors and out
- Stainless-steel mounting plate tolerates high torque and provides superior corrosion resistance against chemicals, salt spray and contact with dissimilar metals
- Straight, 180° mounting plate is ideal for applications requiring a flush mount set off from the mounting hole
- Non-destructive easy release with a flat-head screwdriver, allows clamp to be reused, adjusted without removing or replacing any bolts or screws
- Flammability UL 94 HB
- Material: Polyamide 6.6 high impact modified, heat and UV stabilized (PA66HIRHSUV), Stainless Steel (SS304)



RoHS ✓



Type	Drawing	Angle/Length Variant	Length (L2) (mm)	Width (W) (mm)	N	Mounting Hole Centre (mm)	Mounting Hole Ø (FH) (mm)	Qty	Article-No.
RCA180SM6SS		180° Short	83.1	34.9	445.0	50.5	6.5	300	151-01911
RCA180SM8SS		180° Short	83.1	34.9	445.0	50.5	8.3	300	151-01912
RCA180SM10SS		180° Short	83.1	34.9	445.0	50.5	10.3	300	151-01913
RCA180SM12SS		180° Short	83.1	34.9	445.0	50.5	13.0	300	151-01914
RCA180MM6SS		180° Medium	105.1	34.9	445.0	72.5	6.5	200	151-01915
RCA180MM8SS		180° Medium	105.1	34.9	445.0	72.5	8.3	200	151-01916
RCA180MM10SS		180° Medium	105.1	34.9	445.0	72.5	10.3	200	151-01917
RCA180MM12SS		180° Medium	105.1	34.9	445.0	72.5	13.0	200	151-01918
RCA180LM6SS		180° Long	134.1	34.9	445.0	101.5	6.5	200	151-01919
RCA180LM8SS		180° Long	134.1	34.9	445.0	101.5	8.3	200	151-01920
RCA180LM10SS		180° Long	134.1	34.9	445.0	101.5	10.3	200	151-01921
RCA180LM12SS		180° Long	134.1	34.9	445.0	101.5	13.0	200	151-01922

Dimensions are approximate and subject to technical changes.

Suitable for the following industries:



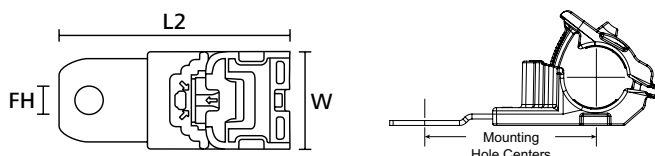
### Angled Stainless Steel Ratchet P-Clamps

#### Size A: Bundle Diameters 6.2 - 13.7mm (Black)

- Temperature -40°C to +105°C
- One-piece ratchet closure allows for easy installation by hand during pre- or final assembly
- Easy release feature simplifies quick adjustments and maintenance
- Impact modified, heat and UV stabilized PA66 provides long-term durability, indoors and out
- Stainless-steel mounting plate tolerates high torque and provides superior corrosion resistance against chemicals, salt spray and contact with dissimilar metals
- Straight, 180° mounting plate is ideal for applications requiring a flush mount set off from the mounting hole
- Non-destructive easy release with a flat-head screwdriver, allows clamp to be reused, adjusted without removing or replacing any bolts or screws
- Flammability UL 94 HB
- Material: Polyamide 6.6 high impact modified, heat and UV stabilized (PA66HIRHSUV), Stainless Steel (SS304)



RoHS ✓



Type	Drawing	Angle/Length Variant	Length (L2) (mm)	Width (W) (mm)	N	Mounting Hole Centre (mm)	Mounting Hole Ø (FH) (mm)	Qty	Article-No.
RCA15SM6SS		15° Short	86.9	34.9	445.0	54.7	6.5	300	151-01923
RCA15SM8SS		15° Short	86.9	34.9	445.0	54.7	8.3	300	151-01924
RCA15SM10SS		15° Short	86.9	34.9	445.0	54.7	10.3	300	151-01925
RCA15SM12SS		15° Short	86.9	34.9	445.0	54.7	13.0	300	151-01926
RCA30SM6SS		30° Short	78.5	34.9	445.0	47.7	6.5	300	151-01927
RCA30SM8SS		30° Short	78.5	34.9	445.0	47.7	8.3	300	151-01928
RCA30SM10SS		30° Short	78.5	34.9	445.0	47.7	10.3	300	151-01929
RCA30SM12SS		30° Short	78.5	34.9	445.0	47.7	13.0	300	151-01930
RCA30LM6SS		30° Long	103.2	34.9	445.0	47.7	6.5	200	151-01931
RCA30LM8SS		30° Long	103.2	34.9	445.0	72.4	8.3	200	151-01932
RCA30LM10SS		30° Long	103.2	34.9	445.0	72.4	10.3	200	151-01933
RCA30LM12SS		30° Long	103.2	34.9	445.0	72.4	13.0	200	151-01934
RCA90SM6SS		90° Short	68.8	34.9	445.0	72.4	6.5	300	151-01935
RCA90SM8SS		90° Short	68.8	34.9	445.0	24.9	8.3	300	151-01936
RCA90SM10SS		90° Short	68.8	34.9	445.0	24.9	10.3	300	151-01937
RCA90SM12SS		90° Short	68.8	34.9	445.0	24.9	13.0	300	151-01938
RCA90LM6SS		90° Long	96.8	34.9	445.0	24.9	6.5	200	151-01939
RCA90LM8SS		90° Long	96.8	34.9	445.0	24.9	8.3	200	151-01940
RCA90LM10SS		90° Long	96.8	34.9	445.0	24.9	10.3	200	151-01941
RCA90LM12SS		90° Long	96.8	34.9	445.0	24.9	13.0	200	151-01942

Dimensions are approximate and subject to technical changes.



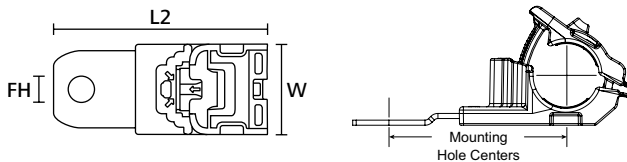
### Stainless Steel Ratchet P-Clamps

**Size B: Bundle Diameters 12.7 - 19.5mm (Black)**

- Temperature -40°C to +105°C
- One-piece ratchet closure allows for easy installation by hand during pre- or final assembly
- Easy release feature simplifies quick adjustments and maintenance
- Impact modified, heat and UV stabilized PA66 provides long-term durability, indoors and out
- Stainless-steel mounting plate tolerates high torque and provides superior corrosion resistance against chemicals, salt spray and contact with dissimilar metals
- Straight, 180° mounting plate is ideal for applications requiring a flush mount set off from the mounting hole
- Non-destructive easy release with a flat-head screwdriver, allows clamp to be reused, adjusted without removing or replacing any bolts or screws
- Flammability UL 94 HB
- Material: Polyamide 6.6 high impact modified, heat and UV stabilized (PA66HIRHSUV), Stainless Steel (SS304)



RoHS ✓



Type	Drawing	Angle/Length Variant	Length (L2) (mm)	Width (W) (mm)	N	Mounting Hole Centre (mm)	Mounting Hole Ø (FH) (mm)	Qty	Article-No.
RCB180SM6SS		180° Short	83.1	34.9	445.0	52.8	6.5	280	151-01911
RCB180SM8SS		180° Short	83.1	34.9	445.0	52.8	8.3	280	151-01912
RCB180SM10SS		180° Short	83.1	34.9	445.0	52.8	10.3	280	151-01913
RCB180SM12SS		180° Short	83.1	34.9	445.0	52.8	13.0	280	151-01914
RCB180MM6SS		180° Medium	105.1	34.9	445.0	74.8	6.5	200	151-01915
RCB180MM8SS		180° Medium	105.1	34.9	445.0	74.8	8.3	200	151-01916
RCB180MM10SS		180° Medium	105.1	34.9	445.0	74.8	10.3	200	151-01917
RCB180MM12SS		180° Medium	105.1	34.9	445.0	74.8	13.0	200	151-01918
RCB180LM6SS		180° Long	134.1	34.9	445.0	103.8	6.5	200	151-01919
RCB180LM8SS		180° Long	134.1	34.9	445.0	103.8	8.3	200	151-01920
RCB180LM10SS		180° Long	134.1	34.9	445.0	103.8	10.3	200	151-01921
RCB180LM12SS		180° Long	134.1	34.9	445.0	103.8	13.0	200	151-01922

Dimensions are approximate and subject to technical changes.

Suitable for the following industries:



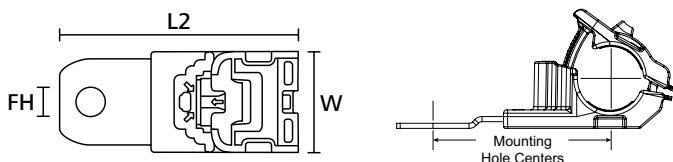
### Angled Stainless Steel Ratchet P-Clamps

#### Size B: Bundle Diameters 12.7 - 19.5mm (Black)

- Temperature -40°C to +105°C
- One-piece ratchet closure allows for easy installation by hand during pre- or final assembly
- Easy release feature simplifies quick adjustments and maintenance
- Impact modified, heat and UV stabilized PA66 provides long-term durability, indoors and out
- Stainless-steel mounting plate tolerates high torque and provides superior corrosion resistance against chemicals, salt spray and contact with dissimilar metals
- Straight, 180° mounting plate is ideal for applications requiring a flush mount set off from the mounting hole
- Non-destructive easy release with a flat-head screwdriver, allows clamp to be reused, adjusted without removing or replacing any bolts or screws
- Flammability UL 94 HB
- Material: Polyamide 6.6 high impact modified, heat and UV stabilized (PA66HIRHSUV), Stainless Steel (SS304)



RoHS ✓



Type	Drawing	Angle/Length Variant	Length (L2) (mm)	Width (W) (mm)	N	Mounting Hole Centre (mm)	Mounting Hole Ø (FH) (mm)	Qty	Article-No.
RCB15SM6SS		15° Short	86.9	34.9	445.0	56.5	6.5	280	151-01923
RCB15SM8SS		15° Short	86.9	34.9	445.0	56.5	8.3	280	151-01924
RCB15SM10SS		15° Short	86.9	34.9	445.0	56.5	10.3	280	151-01925
RCB15SM12SS		15° Short	86.9	34.9	445.0	56.5	13.0	280	151-01926
RCB30SM6SS		30° Short	78.5	34.9	445.0	48.8	6.5	280	151-01927
RCB30SM8SS		30° Short	78.5	34.9	445.0	48.8	8.3	280	151-01928
RCB30SM10SS		30° Short	78.5	34.9	445.0	48.8	10.3	280	151-01929
RCB30SM12SS		30° Short	78.5	34.9	445.0	48.8	13.0	280	151-01930
RCB30LM6SS		30° Long	103.2	34.9	445.0	73.5	6.5	200	151-01931
RCB30LM8SS		30° Long	103.2	34.9	445.0	73.5	8.3	200	151-01932
RCB30LM10SS		30° Long	103.2	34.9	445.0	73.5	10.3	200	151-01933
RCB30LM12SS		30° Long	103.2	34.9	445.0	73.5	13.0	200	151-01934
RCB90SM6SS		90° Short	68.8	34.9	445.0	26.7	6.5	280	151-01935
RCB90SM8SS		90° Short	68.8	34.9	445.0	26.7	8.3	280	151-01936
RCB90SM10SS		90° Short	68.8	34.9	445.0	26.7	10.3	280	151-01937
RCB90SM12SS		90° Short	68.8	34.9	445.0	26.7	13.0	280	151-01938
RCB90LM6SS		90° Long	96.8	34.9	445.0	26.7	6.5	200	151-01939
RCB90LM8SS		90° Long	96.8	34.9	445.0	26.7	8.3	200	151-01940
RCB90LM10SS		90° Long	96.8	34.9	445.0	26.7	10.3	200	151-01941
RCB90LM12SS		90° Long	96.8	34.9	445.0	26.7	13.0	200	151-01942

Dimensions are approximate and subject to technical changes.



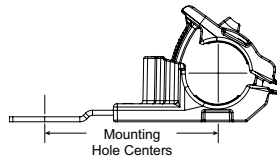
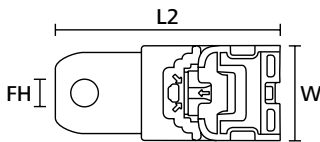
### Stainless Steel Ratchet P-Clamps

**Size C: Bundle Diameters 19.4 - 36.0mm (Black)**

- Temperature -40°C to +105°C
- One-piece ratchet closure allows for easy installation by hand during pre- or final assembly
- Easy release feature simplifies quick adjustments and maintenance
- Impact modified, heat and UV stabilized PA66 provides long-term durability, indoors and out
- Stainless-steel mounting plate tolerates high torque and provides superior corrosion resistance against chemicals, salt spray and contact with dissimilar metals
- Straight, 180° mounting plate is ideal for applications requiring a flush mount set off from the mounting hole
- Non-destructive easy release with a flat-head screwdriver, allows clamp to be reused, adjusted without removing or replacing any bolts or screws
- Flammability UL 94 HB
- Material: Polyamide 6.6 high impact modified, heat and UV stabilized (PA66HIRHSUV), Stainless Steel (SS304)



RoHS ✓



Type	Drawing	Angle/Length Variant	Length (L2) (mm)	Width (W) (mm)	N	Mounting Hole Centre (mm)	Mounting Hole Ø (FH) (mm)	Qty	Article-No.
RCC180SM6SS		180° Short	103.0	34.9	445.0	62.3	6.5	160	151-01975
RCC180SM8SS		180° Short	103.0	34.9	445.0	62.3	8.3	160	151-01976
RCC180SM10SS		180° Short	103.0	34.9	445.0	62.3	10.3	160	151-01977
RCC180SM12SS		180° Short	103.0	34.9	445.0	62.3	13.0	160	151-01978
RCC180MM6SS		180° Medium	125.0	34.9	445.0	84.3	6.5	140	151-01979
RCC180MM8SS		180° Medium	125.0	34.9	445.0	84.3	8.3	140	151-01980
RCC180MM10SS		180° Medium	125.0	34.9	445.0	84.3	10.3	140	151-01981
RCC180MM12SS		180° Medium	125.0	34.9	445.0	84.3	13.0	140	151-01982
RCC180LM6SS		180° Long	154.0	34.9	445.0	113.3	6.5	140	151-01983
RCC180LM8SS		180° Long	154.0	34.9	445.0	113.3	8.3	140	151-01984
RCC180LM10SS		180° Long	154.0	34.9	445.0	113.3	10.3	140	151-01985
RCC180LM12SS		180° Long	154.0	34.9	445.0	113.3	13.0	140	151-01986

Dimensions are approximate and subject to technical changes.

Suitable for the following industries:





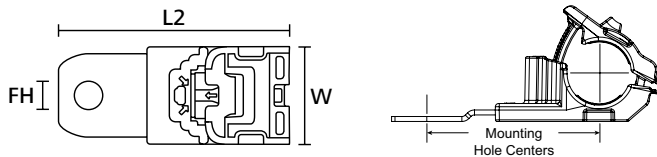
### Angled Stainless Steel Ratchet P-Clamps

**Size C: Bundle Diameters 19.4 - 36.0mm (Black)**

- Temperature -40°C to +105°C
- One-piece ratchet closure allows for easy installation by hand during pre- or final assembly
- Easy release feature simplifies quick adjustments and maintenance
- Impact modified, heat and UV stabilized PA66 provides long-term durability, indoors and out
- Stainless-steel mounting plate tolerates high torque and provides superior corrosion resistance against chemicals, salt spray and contact with dissimilar metals
- Straight, 180° mounting plate is ideal for applications requiring a flush mount set off from the mounting hole
- Non-destructive easy release with a flat-head screwdriver, allows clamp to be reused, adjusted without removing or replacing any bolts or screws
- Flammability UL 94 HB
- Material: Polyamide 6.6 high impact modified, heat and UV stabilized (PA66HIRHSUV), Stainless Steel (SS304)



RoHS ✓



Type	Drawing	Angle/Length Variant	Length (L2) (mm)	Width (W) (mm)	N	Mounting Hole Centre (mm)	Mounting Hole Ø (FH) (mm)	Qty	Article-No.
RCC15SM6SS		15° Short	103.5	34.9	445.0	62.3	6.5	160	151-01987
RCC15SM8SS		15° Short	103.5	34.9	445.0	62.3	8.3	160	151-01988
RCC15SM10SS		15° Short	103.5	34.9	445.0	62.3	10.3	160	151-01989
RCC15SM12SS		15° Short	103.5	34.9	445.0	62.3	13.0	160	151-01990
RCC30SM6SS		30° Short	90.2	34.9	445.0	50.5	6.5	160	151-01991
RCC30SM8SS		30° Short	90.2	34.9	445.0	50.5	8.3	160	151-01992
RCC30SM10SS		30° Short	90.2	34.9	445.0	50.5	10.3	160	151-01993
RCC30SM12SS		30° Short	90.2	34.9	445.0	50.5	13.0	160	151-01994
RCC30LM6SS		30° Long	114.9	34.9	445.0	75.2	6.5	140	151-01995
RCC30LM8SS		30° Long	114.9	34.9	445.0	75.2	8.3	140	151-01996
RCC30LM10SS		30° Long	114.9	34.9	445.0	75.2	10.3	140	151-01997
RCC30LM12SS		30° Long	114.9	34.9	445.0	75.2	13.0	140	151-01998
RCC90SM6SS		90° Short	101.2	34.9	445.0	39.9	6.5	160	151-01999
RCC90SM8SS		90° Short	101.2	34.9	445.0	39.9	8.3	160	151-02001
RCC90SM10SS		90° Short	101.2	34.9	445.0	39.9	10.3	160	151-02002
RCC90SM12SS		90° Short	101.2	34.9	445.0	39.9	13.0	160	151-02003
RCC90LM6SS		90° Long	129.2	34.9	445.0	39.9	6.5	140	151-02004
RCC90LM8SS		90° Long	129.2	34.9	445.0	39.9	8.3	140	151-02005
RCC90LM10SS		90° Long	129.2	34.9	445.0	39.9	10.3	140	151-02006
RCC90LM12SS		90° Long	129.2	34.9	445.0	39.9	13.0	140	151-02007

Dimensions are approximate and subject to technical changes.



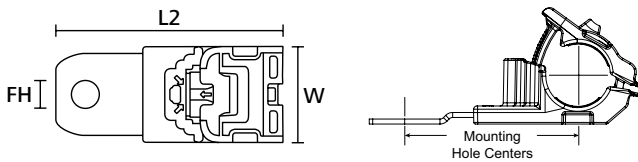
### Stainless Steel Ratchet P-Clamps

**Size D: Bundle Diameters 36.0 - 51.0mm (Black)**

- Temperature -40°C to +105°C
- One-piece ratchet closure allows for easy installation by hand during pre- or final assembly
- Easy release feature simplifies quick adjustments and maintenance
- Impact modified, heat and UV stabilized PA66 provides long-term durability, indoors and out
- Stainless-steel mounting plate tolerates high torque and provides superior corrosion resistance against chemicals, salt spray and contact with dissimilar metals
- Straight, 180° mounting plate is ideal for applications requiring a flush mount set off from the mounting hole
- Non-destructive easy release with a flat-head screwdriver, allows clamp to be reused, adjusted without removing or replacing any bolts or screws
- Flammability UL 94 HB
- Material: Polyamide 6.6 high impact modified, heat and UV stabilized (PA66HIRHSUV), Stainless Steel (SS304)



RoHS ✓



Type	Drawing	Angle/Length Variant	Length (L2) (mm)	Width (W) (mm)	N	Mounting Hole Centre (mm)	Mounting Hole Ø (FH) (mm)	Qty	Article-No.
RCD180SM6SS		180° Short	115.5	34.9	445.0	70.0	6.5	160	151-02008
RCD180SM8SS		180° Short	115.5	34.9	445.0	70.0	8.3	160	151-02009
RCD180SM10SS		180° Short	115.5	34.9	445.0	70.0	10.3	160	151-02010
RCD180SM12SS		180° Short	115.5	34.9	445.0	70.0	13.0	160	151-02011
RCD180MM6SS		180° Medium	137.5	34.9	445.0	92.0	6.5	140	151-02012
RCD180MM8SS		180° Medium	137.5	34.9	445.0	92.0	8.3	140	151-02013
RCD180MM10SS		180° Medium	137.5	34.9	445.0	92.0	10.3	140	151-02014
RCD180MM12SS		180° Medium	137.5	34.9	445.0	92.0	13.0	140	151-02015
RCD180LM6SS		180° Long	166.5	34.9	445.0	121.0	6.5	140	151-02016
RCD180LM8SS		180° Long	166.5	34.9	445.0	121.0	8.3	140	151-02017
RCD180LM10SS		180° Long	166.5	34.9	445.0	121.0	10.3	140	151-02018
RCD180LM12SS		180° Long	166.5	34.9	445.0	121.0	13.0	140	151-02019

Dimensions are approximate and subject to technical changes.

Suitable for the following industries:



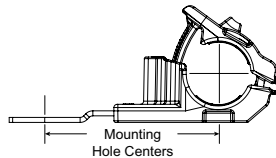
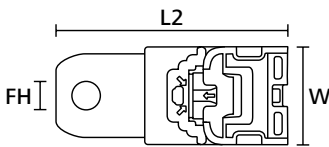
### Angled Stainless Steel Ratchet P-Clamps

**Size D: Bundle Diameters 36.0 - 51.0mm (Black)**

- Temperature -40°C to +105°C
- One-piece ratchet closure allows for easy installation by hand during pre- or final assembly
- Easy release feature simplifies quick adjustments and maintenance
- Impact modified, heat and UV stabilized PA66 provides long-term durability, indoors and out
- Stainless-steel mounting plate tolerates torque and provides superior corrosion resistance against chemicals, salt spray and contact with dissimilar metals
- Straight, 180° mounting plate is ideal for applications requiring a flush mount set off from the mounting hole
- Non-destructive easy release with a flat-head screwdriver, allows clamp to be reused, adjusted without removing or replacing any bolts or screws
- Flammability UL 94 HB
- Material: Polyamide 6.6 high impact modified, heat and UV stabilized (PA66HIRHSUV), Stainless Steel (SS304)



RoHS ✓



Type	Drawing	Angle/Length Variant	Length (L2) (mm)	Width (W) (mm)	N	Mounting Hole Centre (mm)	Mounting Hole Ø (FH) (mm)	Qty	Article-No.
RCD15SM6SS		15° Short	115.9	34.9	445.0	69.1	6.5	160	151-01987
RCD15SM8SS		15° Short	115.9	34.9	445.0	69.1	8.3	160	151-01988
RCD15SM10SS		15° Short	115.9	34.9	445.0	69.1	10.3	160	151-01989
RCD15SM12SS		15° Short	115.9	34.9	445.0	69.1	13.0	160	151-01990
RCD30SM6SS		30° Short	102.4	34.9	445.0	55.9	6.5	160	151-01991
RCD30SM8SS		30° Short	102.4	34.9	445.0	55.9	8.3	160	151-01992
RCD30SM10SS		30° Short	102.4	34.9	445.0	55.9	10.3	160	151-01993
RCD30SM12SS		30° Short	102.4	34.9	445.0	55.9	13.0	160	151-01994
RCD30LM6SS		30° Long	127.0	34.9	445.0	80.5	6.5	140	151-01995
RCD30LM8SS		30° Long	127.0	34.9	445.0	80.5	8.3	140	151-01996
RCD30LM10SS		30° Long	127.0	34.9	445.0	80.5	10.3	140	151-01997
RCD30LM12SS		30° Long	127.0	34.9	445.0	80.5	13.0	140	151-01998
RCD90SM6SS		90° Short	88.7	34.9	445.0	42.4	6.5	160	151-01999
RCD90SM8SS		90° Short	88.7	34.9	445.0	42.4	8.3	160	151-02001
RCD90SM10SS		90° Short	88.7	34.9	445.0	42.4	10.3	160	151-02002
RCD90SM12SS		90° Short	88.7	34.9	445.0	42.4	13.0	160	151-02003
RCD90LM6SS		90° Long	116.7	34.9	445.0	42.4	6.5	140	151-02004
RCD90LM8SS		90° Long	116.7	34.9	445.0	42.4	8.3	140	151-02005
RCD90LM10SS		90° Long	116.7	34.9	445.0	42.4	10.3	140	151-02006
RCD90LM12SS		90° Long	116.7	34.9	445.0	42.4	13.0	140	151-02007

Dimensions are approximate and subject to technical changes.



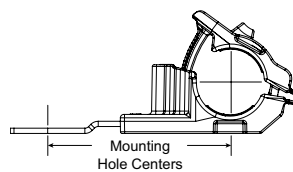
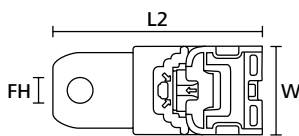
### Stainless Steel Ratchet P-Clamps

**Size F: Bundle Diameters 63.0 - 80.0mm (Black)**

- Temperature -40°C to +105°C
- One-piece ratchet closure allows for easy installation by hand during pre- or final assembly
- Easy release feature simplifies quick adjustments and maintenance
- Impact modified, heat and UV stabilized PA66 provides long-term durability, indoors and out
- Stainless-steel mounting plate tolerates high torque and provides superior corrosion resistance against chemicals, salt spray and contact with dissimilar metals
- Straight, 180° mounting plate is ideal for applications requiring a flush mount set off from the mounting hole
- Non-destructive easy release with a flat-head screwdriver, allows clamp to be reused, adjusted without removing or replacing any bolts or screws
- Flammability UL 94 HB
- Material: Polyamide 6.6 high impact modified, heat and UV stabilized (PA66HIRHSUV), Stainless Steel (SS304)



RoHS ✓



Type	Drawing	Angle/Length Variant	Length (L2) (mm)	Width (W) (mm)	N	Mounting Hole Centre (mm)	Mounting Hole Ø (FH) (mm)	Qty	Article-No.
RCF180SM6SS		180° Short	147.9	34.9	445.0	88.0	6.5	100	151-03203
RCF180SM8SS		180° Short	147.9	34.9	445.0	88.0	8.3	100	151-03122
RCF180SM10SS		180° Short	147.9	34.9	445.0	88.0	10.3	100	151-03123
RCF180SM12SS		180° Short	147.9	34.9	445.0	88.0	13.0	100	151-03124

Dimensions are approximate and subject to technical changes.

Suitable for the following industries:



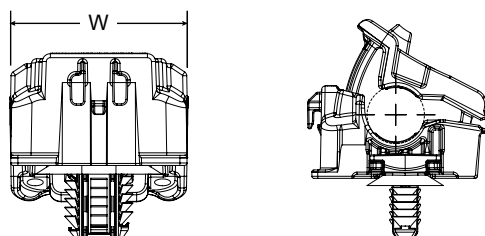
### Inline Ratchet P-Clamps

#### Oval Fir Tree Mount

- Temperature -40°C to +105°C
- One-piece ratchet closure allows for easy installation by hand during pre- or final assembly
- Easy release feature simplifies quick adjustments and maintenance
- Impact modified, heat and UV stabilized PA66 provides long-term durability, indoors and out
- Built-in attachments include round and oval fir trees and adhesive mounts for securing to a hole or pane
- Non-destructive easy release with a flat-head screwdriver, allows clamp to be reused, adjusted without removing or replacing any bolts or screws
- Flammability UL 94 HB
- Material: Polyamide 6.6 high impact modified, heat and UV stabilized (PA66HIRHSUV)



RoHS ✓



#### Oval Fir Tree Mount: 7 x 12mm (Black)

Type	Min. Bundle Ø (mm)	Max. Bundle Ø (mm)	Width (W) (mm)	N	Mounting Hole Ø (mm)	Panel Thickness (mm)	Fixing	Qty	Article-No.
IRCAFTOVAL	6.1	13.7	34.9	445.0	7.0 x 12.0	0.6 - 6.8	Fir Tree for oval holes	25	156-02710
	6.1	13.7	34.9	445.0	7.0 x 12.0	0.6 - 6.8	Fir Tree for oval holes	250	156-02618
IRCBFTOVAL	12.7	19.6	34.9	445.0	7.0 x 12.0	0.6 - 6.8	Fir Tree for oval holes	25	156-02711
	12.7	19.6	34.9	445.0	7.0 x 12.0	0.6 - 6.8	Fir Tree for oval holes	250	156-02628
IRCCFTOVAL	19.3	36.0	34.9	445.0	7.0 x 12.0	0.6 - 6.8	Fir Tree for oval holes	25	156-02712
	19.3	36.0	34.9	445.0	7.0 x 12.0	0.6 - 6.8	Fir Tree for oval holes	250	156-02638
IRCDFTOVAL	36.0	50.8	34.9	445.0	7.0 x 12.0	0.6 - 6.8	Fir Tree for oval holes	25	156-02713
	36.0	50.8	34.9	445.0	7.0 x 12.0	0.6 - 6.8	Fir Tree for oval holes	200	156-02648

Dimensions are approximate and subject to technical changes.

#### Oval Fir Tree Mount: 9 x 17mm (Black)

Type	Min. Bundle Ø (mm)	Max. Bundle Ø (mm)	Width (W) (mm)	N	Mounting Hole Ø (mm)	Panel Thickness (mm)	Fixing	Qty	Article-No.
IRCAFT9X17	6.1	13.7	34.9	445.0	9.0 x 17.0	0.6 - 6.8	Fir Tree for oval holes	25	156-02718
	6.1	13.7	34.9	445.0	9.0 x 17.0	0.6 - 6.8	Fir Tree for oval holes	250	156-02622
IRCBFT9X17	12.7	19.6	34.9	445.0	9.0 x 17.0	0.6 - 6.8	Fir Tree for oval holes	25	156-02719
	12.7	19.6	34.9	445.0	9.0 x 17.0	0.6 - 6.8	Fir Tree for oval holes	250	156-02632
IRCCFT9X17	19.3	36.0	34.9	445.0	9.0 x 17.0	0.6 - 6.8	Fir Tree for oval holes	25	156-02720
	19.3	36.0	34.9	445.0	9.0 x 17.0	0.6 - 6.8	Fir Tree for oval holes	250	156-02642
IRCDFT9X17	36.0	50.8	34.9	445.0	9.0 x 17.0	0.6 - 6.8	Fir Tree for oval holes	25	156-02721
	36.0	50.8	34.9	445.0	9.0 x 17.0	0.6 - 6.8	Fir Tree for oval holes	200	156-02652

Dimensions are approximate and subject to technical changes.



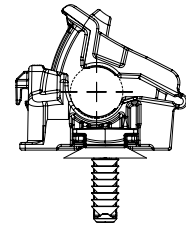
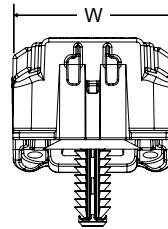
## Inline Ratchet P-Clamps

### Round Fir Tree Mount (Black)

- Temperature -40°C to +105°C
- One-piece ratchet closure allows for easy installation by hand during pre- or final assembly
- Easy release feature simplifies quick adjustments and maintenance
- Impact modified, heat and UV stabilized PA66 provides long-term durability, indoors and out
- Built-in attachments include round and oval fir trees and adhesive mounts for securing to a hole or pane
- Non-destructive easy release with a flat-head screwdriver, allows clamp to be reused, adjusted without removing or replacing any bolts or screws
- Flammability UL 94 HB
- Material: Polyamide 6.6 high impact modified, heat and UV stabilized (PA66HIRHSUV)



RoHS ✓



### Round Fir Tree Mount: 6.5mm (Black)

Type	Min. Bundle Ø (mm)	Max. Bundle Ø (mm)	Width (W) (mm)	N	Mounting Hole Ø (mm)	Panel Thickness (mm)	Fixing	Qty	Article-No.
IRCAFT6.5LG	6.1	13.7	34.9	445.0	6.5	0.6 - 9.0	Fir Tree for round holes	25	156-02706
	6.1	13.7	34.9	445.0	6.5	0.6 - 9.0	Fir Tree for round holes	250	156-02616
IRCBFT6.5LG	12.7	19.6	34.9	445.0	6.5	0.6 - 9.0	Fir Tree for round holes	25	156-02707
	12.7	19.6	34.9	445.0	6.5	0.6 - 9.0	Fir Tree for round holes	250	156-02626
IRCCFT6.5LG	19.3	36.0	34.9	445.0	6.5	0.6 - 9.0	Fir Tree for round holes	25	156-02708
	19.3	36.0	34.9	445.0	6.5	0.6 - 9.0	Fir Tree for round holes	250	156-02636
IRCDFT6.5LG	36.0	50.8	34.9	445.0	6.5	0.6 - 9.0	Fir Tree for round holes	25	156-02709
	36.0	50.8	34.9	445.0	6.5	0.6 - 9.0	Fir Tree for round holes	200	156-02646

Dimensions are approximate and subject to technical changes.

Type	Min. Bundle Ø (mm)	Max. Bundle Ø (mm)	Width (W) (mm)	N	Mounting Hole Ø (mm)	Panel Thickness (mm)	Fixing	Qty	Article-No.
IRCAFT9LG	6.1	13.7	34.9	445.0	9.0	0.6 - 12.7	Fir Tree for round holes	25	156-02714
	6.1	13.7	34.9	445.0	9.0	0.6 - 12.7	Fir Tree for round holes	250	156-02620
IRCBFT9LG	12.7	19.6	34.9	445.0	9.0	0.6 - 12.7	Fir Tree for round holes	25	156-02715
	12.7	19.6	34.9	445.0	9.0	0.6 - 12.7	Fir Tree for round holes	250	156-02630
IRCCFT9LG	19.3	36.0	34.9	445.0	9.0	0.6 - 12.7	Fir Tree for round holes	25	156-02716
	19.3	36.0	34.9	445.0	9.0	0.6 - 12.7	Fir Tree for round holes	250	156-02640
IRCDFT9LG	36.0	50.8	34.9	445.0	9.0	0.6 - 12.7	Fir Tree for round holes	25	156-02717
	36.0	50.8	34.9	445.0	9.0	0.6 - 12.7	Fir Tree for round holes	200	156-02650

Dimensions are approximate and subject to technical changes.



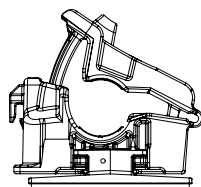
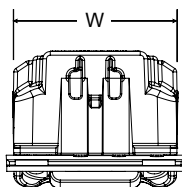
### Inline Ratchet P-Clamps

#### Adhesive Mount (Black)

- Temperature -40°C to +105°C
- One-piece ratchet closure allows for easy installation by hand during pre- or final assembly
- Easy release feature simplifies quick adjustments and maintenance
- Impact modified, heat and UV stabilized PA66 provides long-term durability, indoors and out
- Built-in attachments include round and oval fir trees and adhesive mounts for securing to a hole or pane
- Non-destructive easy release with a flat-head screwdriver, allows clamp to be reused, adjusted without removing or replacing any bolts or screws
- Flammability UL 94 HB
- Material: Polyamide 6.6 high impact modified, heat and UV stabilized (PA66HIRHSUV)



RoHS ✓

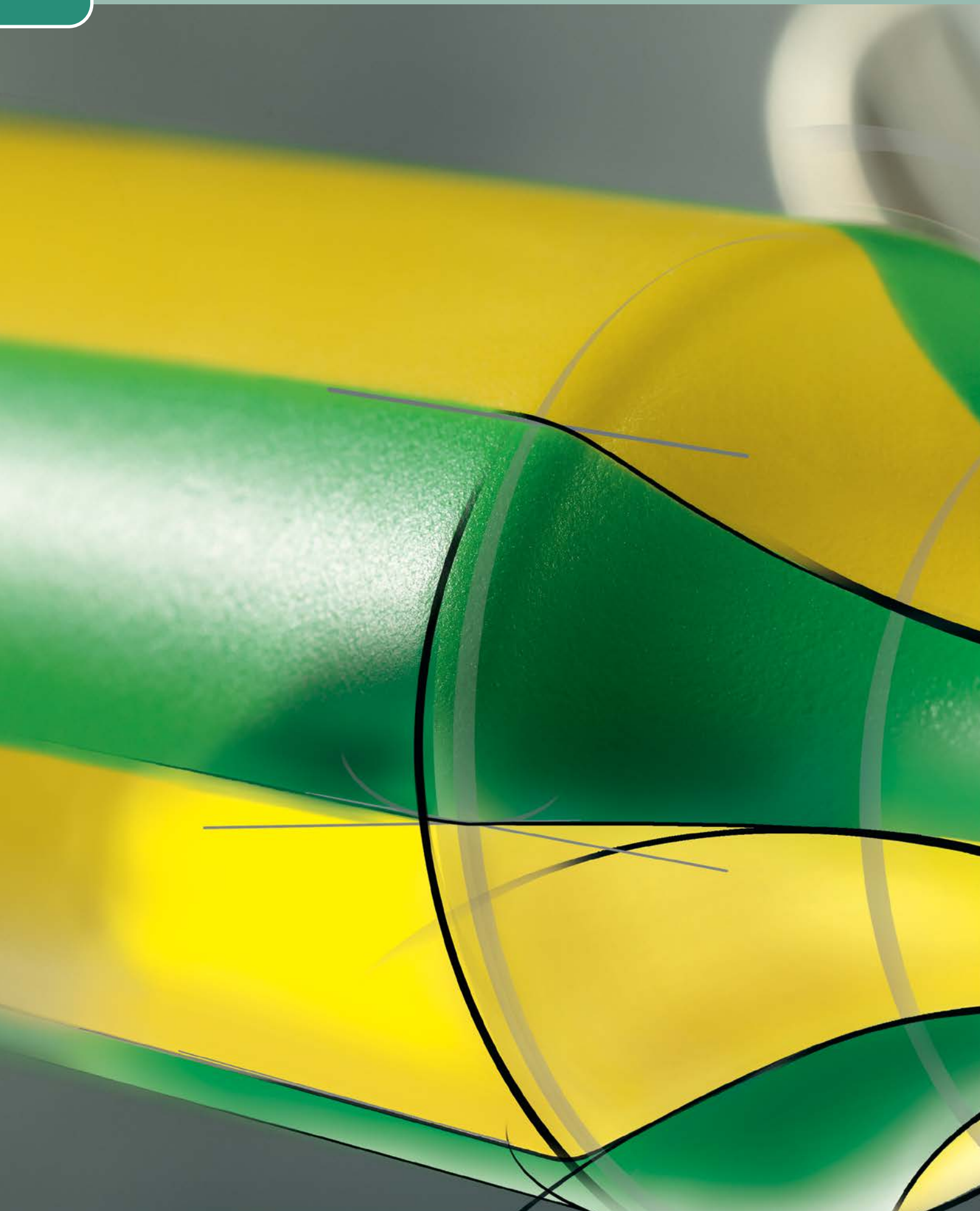


Type	Min. Bundle Ø (mm)	Max. Bundle Ø (mm)	Width (W) (mm)	N	Panel Thickness (mm)	Fixing	Adhesive	Qty	Article-No.
IRCAMB5A	6.1	13.7	34.9	445.0	0.6 - 9.0	Adhesive	Acrylic	25	156-02722
	6.1	13.7	34.9	445.0	0.6 - 9.0	Adhesive	Acrylic	250	156-02624
IRCBMB5A	12.7	19.6	34.9	445.0	0.6 - 9.0	Adhesive	Acrylic	25	156-02723
	12.7	19.6	34.9	445.0	0.6 - 9.0	Adhesive	Acrylic	250	156-02634
IRCCMB5A	19.3	36.0	34.9	445.0	0.6 - 9.0	Adhesive	Acrylic	25	156-02724
	19.3	36.0	34.9	445.0	0.6 - 9.0	Adhesive	Acrylic	250	156-02644
IRCDMB5A	36.0	50.8	34.9	445.0	0.6 - 9.0	Adhesive	Acrylic	25	156-02725
	36.0	51.0	34.9	445.0	0.6 - 9.0	Adhesive	Acrylic	200	156-02654

Dimensions are approximate and subject to technical changes.

Suitable for the following industries:







## Inspired by Paul Hellermann

**2.0 Insulation**








































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Type	Product picture	Variant	Material	Shrink Ratio	Operating Temperature (°C)	Longitudinal change after shrinkage [Max]
Hot Melt Tape		Adhesive Tape	EVA		-55 to +105	N/A
Low Voltage Joint Kits (Includes copper braid, roll springs)		Medium wall	PO-X	2:1	-55 to +135	N/A
Submersible Joint Kits		Medium wall	PO-X	2:1	-55 to +135	N/A
LVR		Thin wall	PVC	2:1	-30 to +105	+/-10%
SGP (Available in 1m packs)		Thin wall	PO-X	2:1	-55 to +125	-10%
TFE2		Thin wall	PTFE	2:1	-70 to +260	-20%
TL27		Thin wall	PO-X	2:1	-55 to +135	+5%/-15%
TR27		Thin wall	PO-X	2:1	-40 to +105	+5%/-10%
Viton® -E		Standard wall	FPMX	2:1	-55 to +220	-10%
HFT-A		Thin wall	PO-X	2:1	-55 to +135	5%
HFT-B		Thin wall	PO-X	2:1	-55 to +135	+5%/-10%
HFT-333		Thin wall	PO	3:1	-55 to +135	+5/-15%
IMCS-A		Medium wall	PO-X	3:1	-55 to +130	-10%
TF34		Thin wall	PO-X	3:1	-55 to +135	-5%
EPS-300		Thin wall hot melt adhesive	PO-X	3:1	-55 to +125	-10%
EPS-400		Thin wall hot melt adhesive	PO-X	4:1	-55 to +125	-10%
HA47		Thick wall hot melt adhesive	PO-X	up to 4:1	-55 to +110	-10%
TFE4		Thin wall	PTFE	4:1	-70 to +260	-20%

\* Please refer to our website [www.HellermannTyton.co.za](http://www.HellermannTyton.co.za) for product specific colour certification and approvals

\*\* Black UV stable

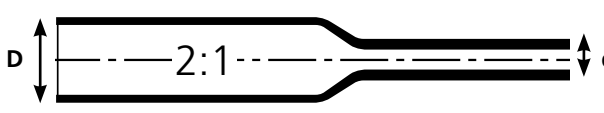
#Not flame retardant

Dielectric strength	Colour	Flammability	Self-extinguishing	Flame Retardant	Material Specification	Certification & Approvals*
N/A	CL 				HF✓ RoHS✓	DEF STAN
>20kVmm (ASTM D2671)	BK 		●	●	HF✓ RoHS✓	
>20kVmm ((ASTM D2671))	BK 		●		HF✓ RoHS✓	
15kV/mm (IEC 243)	BK  YL  WT  BL  RD  GYS 	UL224 VW-1 ASTM D2671	●	●	RoHS✓	
20kV/mm (ASTM D2671)	BK**  YL  WT  GYS  BL  RD  CL 	UL224 ASTM D2671	●	●*	HF✓ RoHS✓	
40kV/mm (DIN 53481)	CL 	Non-burning	●		RoHS✓	
20kV/mm	BK 	FMVSS 302		●	HF✓ RoHS✓	
15kV/mm (IEC 684 P2)	BK 	Limited fire hazard	●	●	HF✓ RoHS✓ LFH✓	EN 45545-2 DEF STAN
15kV/mm	BK 	VG 95343	●		RoHS✓	LEA VG
20kV/mm (IEC 684 P2)	BK  YL  WH  BL  RD 	UL224 VW-1	●		HF✓ RoHS✓	ASN  DEF STAN LEA MIL NF F NSA  SAE  VG
20kV/mm (IEC 684 P2)	CL 	ASTM D876			HF✓ RoHS✓	DEF STAN MIL NF F SAE
37 kV/mm	BK 	UL224 VW-1	●		RoHS✓	 
20 kV/mm (IEC 684 P2)	BK 	ASTM D876	●		HF✓ RoHS✓	
46kV/mm	CL 				HF✓	
15kV/mm (IEC 684 P2)	BK 	ASTM D2671	●		RoHS✓	SAE
15kV/mm (IEC 684 P2)	BK 	ASTM D2671	●		RoHS✓	SAE
20kV/mm	BK 				HF✓ RoHS✓	
40kV/mm (DIN 53481)	CL 		●		RoHS✓	

### Selecting the Correct Heatshrink Tubing Size

Heatshrink ratio refers to the expansion and recovery rate of the heatshrink tubing. When selecting the correct heatshrink tubing size, it is important to use the 80:20 rule. The 80:20 rule means that a heatshrink tube should shrink by at least 20% and not more than 80% of its complete shrinkage capacity to achieve the desired result.

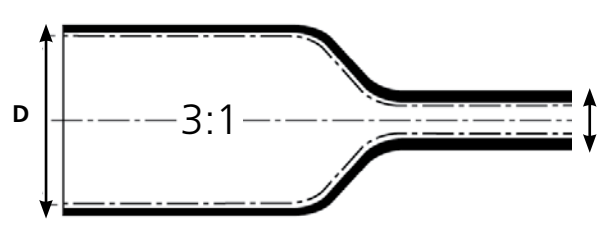
**Shrink ratio 2:1**



Size		Cable / Wire diameter
1.2/ 0.6		0.7mm
		1.1mm
		1.4mm
3.2/1.6	2.4/1.2	1.9mm
		2.2mm
		2.9mm
6.4/3.2	4.8/2.4	3.8mm
		4.3mm
		5.7mm
12.7/6.4	9.5/4.7	5.8mm
		7.7mm
		8.6mm
25.4/12.7	19.1/9.5	11.4mm
		15.2mm
		17.2mm
50.8/25.4	38.1/19.1	22.9mm
		30.5mm
		34.3mm
101.6/50.8	76.2/38.1	45.7mm
		61mm
		68.6mm
		91.4mm

**Note:** Standard thin wall will shrink to half its supplied size

**Shrink ratio 3:1**






Size		Cable / Wire diameter
1.5/ 0.5		0.7mm
		1.3mm
		1.4mm
6.0/2.0	3.0/1.0	2.6mm
		2.8mm
		5.2mm
24/8	12/4.0	5.6mm
		10.4mm
		11.2mm
	39/13	18.2mm
		20.8mm
		34.6mm

## Example: Heatshrink Ratio 3:1

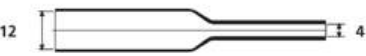


A 5mm cable diameter is to be wrapped in heatshrink tubing. Either 6/2 or 12/4 tubing is suitable, since the 5mm cable diameter lies within the shrink range of both tube sizes.

### Size 6/2

Tube size 6/2 has a range between 2.8mm and 5.2mm which is suitable for a 5mm cable diameter.

Maximum shrink (100%)	Optimum shrinkage max. (80%)	Optimum shrinkage min. (20%)
 <p>Maximum shrinkage = 4.0mm</p>	 <p>Shrinkage = 3.2mm</p>	 <p>Shrinkage = 0.8mm</p>

### Size 12/4

Maximum shrink (100%)	Optimum shrinkage max. (80%)	Optimum shrinkage min. (20%)
 <p>Maximum shrinkage = 8.0mm</p>	 <p>Shrinkage = 6.4mm</p>	 <p>Shrinkage = 1.6mm</p>

**Note:** Tube size 12/4 smallest diameter is 5.6mm which is unsuitable for a 5mm cable diameter.

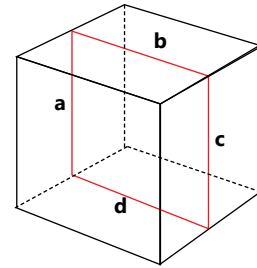
### Chart below refers to standard sizes offered in our range

<b>Inch</b>	1/32"	3/64"	1/16"	5/64"	3/32"	1/8"	3/16"	1/4"	3/8"
<b>mm</b>	0.8	1.2	1.6	2	2.4	3.2	4.8	6.4	9.5
<b>Inch</b>	1/2"	5/8"	3/4"	1"	1 1/4"	1 1/2"	2"	3"	4"
<b>mm</b>	12.7	15.9	19.1	25.4	31.8	38.1	50.8	76.2	101.6

### Busbars

To determine the outside diameter (OØ):

- Add four sides (a + b + c + d) together
- Divide by Pi (3.14)
- Sleeve size should include an allowance to give sufficient clearance to slip easily over the bar. An estimation of +10% is recommended
- Answer relates to outside diameter (OØ) you want to shrink down to

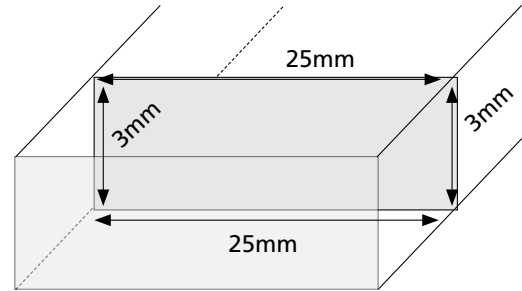


#### Example: Busbar size

Busbar size = 25 x 3

$$\begin{aligned} O\text{Ø} &= (25 + 25 + 3 + 3) \div 3.14 \\ &= 17.83 \text{ (+10\% for clearance)} \\ &= \mathbf{19.61} \end{aligned}$$

Most suitable diameter 19.0mm



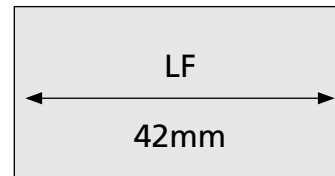
### Lay Flat Sizes Chart

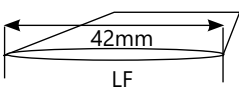
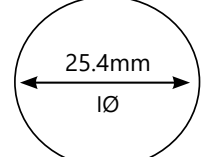
Heatshrink size is given as internal diameter (IØ) and not Lay flat (LF) size.

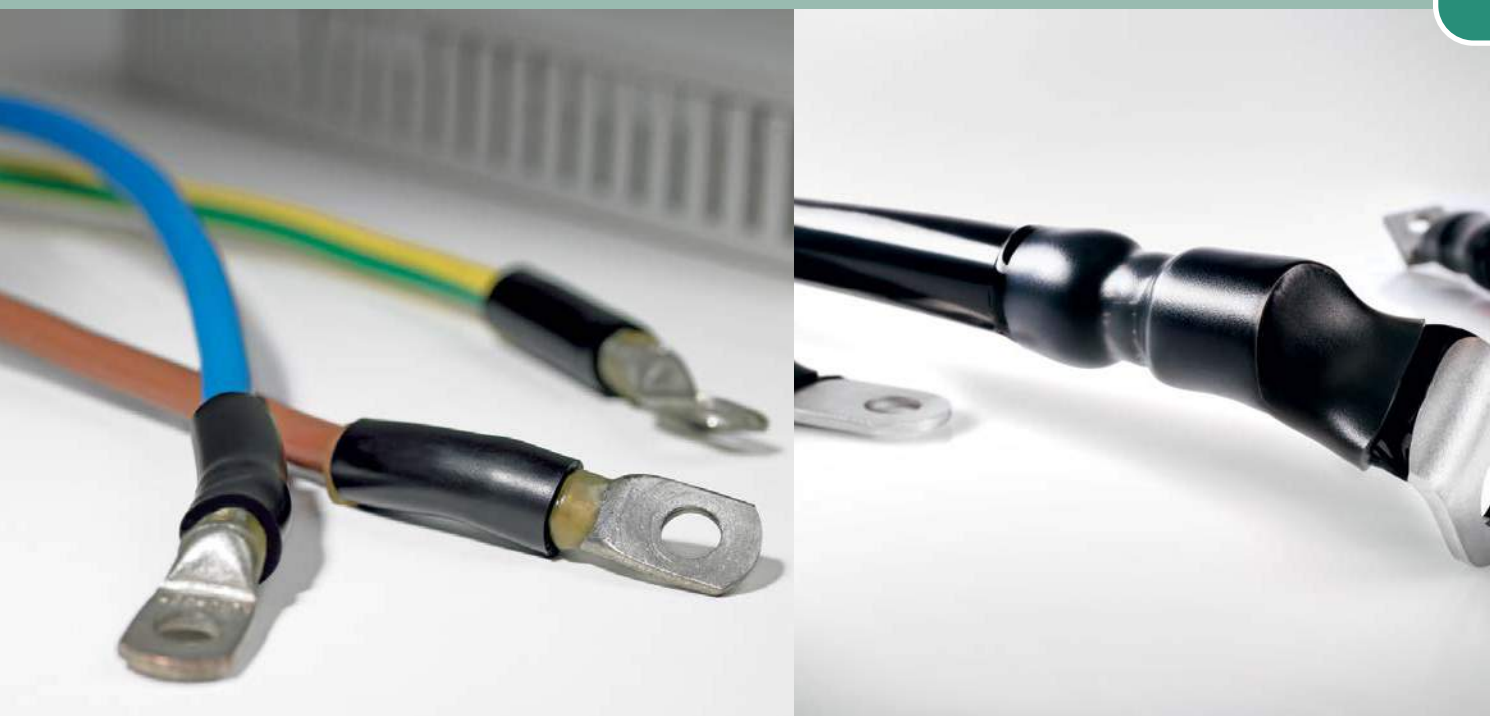
The lay flat size indicates the approximate internal diameter which will always be smaller than measured mm.

#### Example:

$$\begin{aligned} I\text{Ø} &= 2LF \div 3.14 \\ &= \mathbf{26.8} \end{aligned}$$



Lay Flat (mm)	Internal Diameter (IØ)
	
2	1.3
2.5	1.6
4	2.4
6	3.2
8	4.8
11	6.4
16	9.5
21.5	12.7
32.5	19
40 - 43	25.4
63 - 64.5	38.1
84 - 85	50.8
129	76.2
166.5	102
222	120



## 2.2 Heatshrink Tubing

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## Heatshrink Pre-Packs 2:1

### Flame Retardant (Black and Colour)

- Shrink ratio 2:1
- Operating temperature -55°C to +125°C
- Longitudinal change after shrinkage -5% max.
- Min. shrink temperature +120°C
- Electrical connections, terminals, components and wiring systems
- Suitable for continuous insulation sleeve



Convenient 1m packs available in various sizes and colours



























HF ✓

RoHS ✓

Type	Supplied IØ(D)	Recovery IØ(d)	Wall (WT) nom.	Material (p4)	Colour	Length (m)	Article-No.
CP24PBK	2.4	1.2	0.5	POX	Black (BK) ■	1	911-01258
CP24PBL	2.4	1.2	0.5	POX	Blue (BL) ■	1	911-01259
CP24PCL	2.4	1.2	0.5	POX	Clear (CL)* □	1	911-01260
CP24PRD	2.4	1.2	0.5	POX	Red (RD) ■	1	911-01261
CP24PWT	2.4	1.2	0.5	POX	White (WT) □	1	911-01262
CP24PYL	2.4	1.2	0.5	POX	Yellow (YL) ■	1	911-01263
CP32PBK	3.2	1.6	0.5	POX	Black (BK) ■	1	911-01264
CP32PBL	3.2	1.6	0.5	POX	Blue (BL) ■	1	911-01265
CP32PCL	3.2	1.6	0.5	POX	Clear (CL)* □	1	911-01266
CP32PGYS	3.2	1.6	0.5	POX	Green Yellow Stripe (GRYL) ■	1	911-01267
CP32PRD	3.2	1.6	0.5	POX	Red (RD) ■	1	911-01268
CP32PWT	3.2	1.6	0.5	POX	White (WT) □	1	911-01269
CP32PYL	3.2	1.6	0.5	POX	Yellow (YL) ■	1	911-01270
CP48PBK	4.8	2.4	0.5	POX	Black (BK) ■	1	911-01271
CP48PBL	4.8	2.4	0.5	POX	Blue (BL) ■	1	911-01272
CP48PCL	4.8	2.4	0.5	POX	Clear (CL)* □	1	911-01273
CP48PGYS	4.8	2.4	0.5	POX	Green Yellow Stripe (GRYL) ■	1	911-01274
CP48PRD	4.8	2.4	0.5	POX	Red (RD) ■	1	911-01275
CP48PWT	4.8	2.4	0.5	POX	White (WT) □	1	911-01276
CP48PYL	4.8	2.4	0.5	POX	Yellow (YL) ■	1	911-01277
CP64PBK	6.4	3.2	0.6	POX	Black (BK) ■	1	911-01278
CP64PBL	6.4	3.2	0.6	POX	Blue (BL) ■	1	911-01279
CP64PCL	6.4	3.2	0.6	POX	Clear (CL)* □	1	911-01280
CP64PGYS	6.4	3.2	0.6	POX	Green Yellow Stripe (GRYL) ■	1	911-01281
CP64PRD	6.4	3.2	0.6	POX	Red (RD) ■	1	911-01282
CP64PWT	6.4	3.2	0.6	POX	White (WT) □	1	911-01283
CP64PYL	6.4	3.2	0.6	POX	Yellow (YL) ■	1	911-01284
CP95PBK	9.5	4.8	0.6	POX	Black (BK) ■	1	911-01285
CP95PBL	9.5	4.8	0.6	POX	Blue (BL) ■	1	911-01286








## Flame Retardant (Black and Colour)

Type	Supplied IØ(D)	Recovery IØ(d)	Wall (WT) nom.	Material (p4)	Colour	Length (m)	Article-No.
CP95PCL	9.5	4.8	0.6	POX	Clear (CL)* 	1	911-01287
CP95PGYS	9.5	4.8	0.6	POX	Green Yellow Stripe (GRYL) 	1	911-01288
CP95PRD	9.5	4.8	0.6	POX	Red (RD) 	1	911-01289
CP95PWT	9.5	4.8	0.6	POX	White (WT) 	1	911-01290
CP95PYL	9.5	4.8	0.6	POX	Yellow (YL) 	1	911-01291
CP127PBK	12.7	6.4	0.6	POX	Black (BK) 	1	911-01292
CP127PBL	12.7	6.4	0.6	POX	Blue (BL) 	1	911-01293
CP127PCL	12.7	6.4	0.6	POX	Clear (CL)* 	1	911-01294
CP127PGYS	12.7	6.4	0.6	POX	Green Yellow Stripe (GRYL) 	1	911-01295
CP127PRD	12.7	6.4	0.6	POX	Red (RD) 	1	911-01296
CP127PWT	12.7	6.4	0.6	POX	White (WT) 	1	911-01297
CP127PYL	12.7	6.4	0.6	POX	Yellow (YL) 	1	911-01298
CP190PBK	19	9.5	0.8	POX	Black (BK) 	1	911-01299
CP190PBL	19	9.5	0.8	POX	Blue (BL) 	1	911-01300
CP190PCL	19	9.5	0.8	POX	Clear (CL)* 	1	911-01301
CP190PGYS	19	9.5	0.8	POX	Green Yellow Stripe (GRYL) 	1	911-01302
CP190PRD	19	9.5	0.8	POX	Red (RD) 	1	911-01303
CP190PWT	19	9.5	0.8	POX	White (WT) 	1	911-01304
CP190PYL	19	9.5	0.8	POX	Yellow (YL) 	1	911-01305
CP254PBK	25.4	12.7	0.9	POX	Black (BK) 	1	911-01306
CP254PBL	25.4	12.7	0.9	POX	Blue (BL) 	1	911-01307
CP254PCL	25.4	12.7	0.9	POX	Clear (CL)* 	1	911-01308
CP254PGYS	25.4	12.7	0.9	POX	Green Yellow Stripe (GRYL) 	1	911-01309
CP254PRD	25.4	12.7	0.9	POX	Red (RD) 	1	911-01310
CP254PWT	25.4	12.7	0.9	POX	White (WT) 	1	911-01311
CP254PYL	25.4	12.7	0.9	POX	Yellow (YL) 	1	911-01312

All dimensions in mm. Subject to technical changes.

\*CClear is not self extinguishing, flame retardant or HF

## Pre-Pack multiple sizes and colours

Type	Supplied IØ (D)	Material (p4)	Colour	Length (m)	Qty	Article-No.
CPPKITBK	2.4 – 4.8	POX	Black (BK) 	1	x10 (each size)	911-01313
	6.4 – 25.4				x5 (each size)	
CPPKIT-COL	2.4 – 12.7	POX	CL  BL  RD  WT 	1	x5 (each size and colour)	911-01314
	19.0-25.4				x2 (each size and colour)	

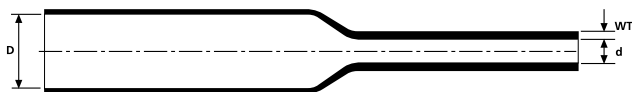
## Recommended Tools

Type			
	HG2120E	HL1920E	HL1821S
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## Heatshrink Tubing 2:1

### LVR, PVC Chloride, Cadmium free (Black and Colour)

- Shrink ratio 2:1
- Cable joints, low voltage busbars and batteries
- Longitudinal change after shrinkage +/-10% max.
- Operating temperature -30°C to +105°C
- Min. shrink temperature +135°C
- Shelf life 12 months max.
- Self-extinguishing
- Good chemical resistance and mechanical protection



LVR
























LVR used for mechanical protection

HF ✓

RoHS ✓

Type	Supplied IØ(D)	Recovery IØ(d)	Wall (WT) nom.	Material (p4)	Colour	Length (m)	Article-No.
LVR12TBK	1.2	0.6	0.40	PVC	Black (BK) ■	500	911-01315
LVR12TYL	1.2	0.6	0.40	PVC	Yellow (YL) ■	500	911-01316
LVR16TBK	1.6	0.8	0.4	PVC	Black (BK) ■	500	911-01317
LVR24TBK	2.4	1.2	0.4	PVC	Black (BK) ■	500	911-01318
LVR24TBL	2.4	1.2	0.4	PVC	Blue (BL) ■	500	911-01319
LVR24TRD	2.4	1.2	0.4	PVC	Red (RD) ■	500	911-01320
LVR24TWT	2.4	1.2	0.4	PVC	White (WT) □	500	911-01321
LVR24TYL	2.4	1.2	0.4	PVC	Yellow (YL) ■	500	911-01322
LVR32TBK	3.2	1.6	0.4	PVC	Black (BK) ■	500	911-01323
LVR32TBL	3.2	1.6	0.4	PVC	Blue (BL) ■	500	911-01324
LVR32TRD	3.2	1.6	0.4	PVC	Red (RD) ■	500	911-01325
LVR32TWT	3.2	1.6	0.4	PVC	White (WT) □	500	911-01326
LVR32TYL	3.2	1.6	0.4	PVC	Yellow (YL) ■	500	911-01327
LV32TGYS	3.2	1.6	0.4	PVC	Green -Yellow Stripe (GYS) ■	500	911-01612
LVR48TBK	4.8	2.4	0.5	PVC	Black (BK) ■	500	911-01328
LVR48TBL	4.8	2.4	0.5	PVC	Blue (BL) ■	500	911-01329
LVR48TRD	4.8	2.4	0.5	PVC	Red (RD) ■	500	911-01330
LVR48TWT	4.8	2.4	0.5	PVC	White (WT) □	500	911-01331
LVR48TYL	4.8	2.4	0.5	PVC	Yellow (YL) ■	500	911-01332
LV48TGYS	4.8	2.4	0.5	PVC	Green -Yellow Stripe (GYS) ■	500	911-01613
LVR64TBK	6.4	3.2	0.6	PVC	Black (BK) ■	250	911-01333
LVR64TBL	6.4	3.2	0.6	PVC	Blue (BL) ■	250	911-01334
LVR64TRD	6.4	3.2	0.6	PVC	Red (RD) ■	250	911-01335
LVR64TWT	6.4	3.2	0.6	PVC	White (WT) □	250	911-01336
LVR64TYL	6.4	3.2	0.6	PVC	Yellow (YL) ■	250	911-01337
LV64TGYS	6.4	3.2	0.6	PVC	Green -Yellow Stripe (GYS) ■	250	911-01614
LVR95TBK	9.5	4.8	0.6	PVC	Black (BK) ■	150	911-01338
LVR95TBL	9.5	4.8	0.6	PVC	Blue (BL) ■	150	911-01339
LVR95TRD	9.5	4.8	0.6	PVC	Red (RD) ■	150	911-01340

### LVR, PVC Chloride, Cadmium free (Black and Colour)

Type	Supplied Ø(D)	Recovery Ø(d)	Wall (WT) nom.	Material (p4)	Colour	Length (m)	Article-No.
LVR95TWT	9.5	4.8	0.6	PVC	White (WT) 	150	911-01341
LVR95TYL	9.5	4.8	0.6	PVC	Yellow (YL) 	150	911-01342
LV95TGYS	9.5	4.8	0.6	PVC	Green -Yellow Stripe (GYS) 	150	911-01615
LVR127TBK	12.7	6.4	0.7	PVC	Black (BK) 	100	911-01343
LVR127TBL	12.7	6.4	0.7	PVC	Blue (BL) 	100	911-01344
LVR127TRD	12.7	6.4	0.7	PVC	Red (RD) 	100	911-01345
LVR127TWT	12.7	6.4	0.7	PVC	White (WT) 	100	911-01346
LVR127TYL	12.7	6.4	0.7	PVC	Yellow (YL) 	100	911-01347
LV127TGYS	12.7	6.4	0.7	PVC	Green -Yellow Stripe (GYS) 	100	911-01608
LVR190TBK	19.0	9.5	0.8	PVC	Black (BK) 	50	911-01348
LVR190TBL	19.0	9.5	0.8	PVC	Blue (BL) 	50	911-01349
LVR190TRD	19.0	9.5	0.8	PVC	Red (RD) 	50	911-01350
LVR190TWT	19.0	9.5	0.8	PVC	White (WT) 	50	911-01351
LVR190TYL	19.0	9.5	0.8	PVC	Yellow (YL) 	50	911-01352
LV190TGYS	19.0	9.5	0.8	PVC	Green -Yellow Stripe (GYS) 	50	911-01609
LVR254TBK	25.4	12.7	1.0	PVC	Black (BK) 	50	911-01353
LVR254TBL	25.4	12.7	1.0	PVC	Blue (BL) 	50	911-01354
LVR254TRD	25.4	12.7	1.0	PVC	Red (RD) 	50	911-01355
LVR254TWT	25.4	12.7	1.0	PVC	White (WT) 	50	911-01356
LVR254TYL	25.4	12.7	1.0	PVC	Yellow (YL) 	50	911-01357
LV254TGYS	25.4	12.7	1.0	PVC	Green -Yellow Stripe (GYS) 	50	911-01610

All dimensions in mm. Subject to technical changes.

### Recommended Tools

Type			
	HG2120E	HL1920E	HL1821S
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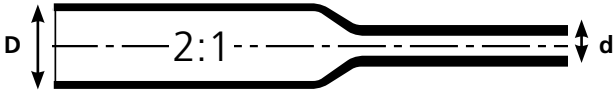
### Heatshrink Joint Kits 2:1

#### Low Voltage and Submersible (Black)

- Shrink ratio 2:1
- Operating temperature -55°C to +135 110°C(\*insulation/sheaths)
- Min. shrink temperature 120°C
- Temperature voltage rating 600/1000V
- Water absorption ISO 62<0.15%
- 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



Low voltage kit



HF ✓

RoHS ✓

Type	Application	Cable Size mm <sup>2</sup> (3 & 4 Core)	Material	Colour	Article-No.
HSJKL154	Low Voltage	1.5 - 4	PO-X	Black (BK) ■	911-01205
HSJKL616	Low Voltage	6 - 16	PO-X	Black (BK) ■	911-01206
HSJKL2550	Low Voltage	25 - 50	PO-X	Black (BK) ■	911-01207
HSJKL70150	Low Voltage	70 - 150	PO-X	Black (BK) ■	911-01208
HSJKL185300	Low Voltage	185 - 300	PO-X	Black (BK) ■	911-01209
HSJKS156	Submersible	1.5 - 6	PO-X	Black (BK) ■	911-01210
HSJKS616	Submersible	6 - 16	PO-X	Black (BK) ■	911-01211

Kits include:

1. Low voltage - inner, outer and 4 ferrule heatshrink sleeves, 2 roll springs, tinned copper braid and instructions
  2. Submersible - inner, outer and 4 ferrule heatshrink sleeves and instructions
- Note: Ferrules are excluded due to cable sizes variations

#### Recommended Tools

Type			
	HG2120E	HL1920E	HL1821S
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## Flame Retardant Heat Shrink Tubing 2:1

### SGP, PO-X (Black and Colour)




























- Shrink ratio 2:1
- Operating temperature -55°C to 125°C
- Tensile strength test method ASTM-D-638 14N/mm<sup>2</sup>
- 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 20kV/mm
- Dielectric constant test method ASTM-D-150 3.0 max.
- Thermal stability
- Higher resistance to physical abuse
- Cost effective
- Effective electrical insulation and protection for in-line components, disconnect terminals and splices
- Bundles wires and cables for very flexible light-duty harnesses
- Strain-relief for electrical wire connections and colour-code wires, cables, terminals and components












































Heatshrink tubing

HF ✓

RoHS ✓

Type	Supplied Ø(D)	Recovery Ø(d)	Wall (WT) nom.	Material (p4)	Colour	Length (m)	Article-No.
SGP16TBK	1.6	0.8	0.43	PO-X	Black (BK) 	200	911-01397
SGP16TBL	1.6	0.8	0.43	PO-X	Blue (BL) 	200	911-01398
SGP16TGYS	1.6	0.8	0.43	PO-X	Green-Yellow Stripe (GYS) 	200	911-01399
SGP16TRD	1.6	0.8	0.43	PO-X	Red (RD) 	200	911-01400
SGP16TYL	1.6	0.8	0.43	PO-X	Yellow (YL) 	200	911-01401
SGP24TBK	2.4	1.2	0.508	PO-X	Black 	200	911-01402
SGP24TBL	2.4	1.2	0.508	PO-X	Blue 	200	911-01404
SGP24TGYS	2.4	1.2	0.508	PO-X	Green-Yellow Stripe 	200	911-01406
SGP24TRD	2.4	1.2	0.508	PO-X	Red 	200	911-01407
SGP24TWT	2.4	1.2	0.508	PO-X	White 	200	911-01409
SGP24TYL	2.4	1.2	0.508	PO-X	Yellow 	200	911-01411
SGP32TBK	3.2	1.6	0.508	PO-X	Black 	200	911-01413
SGP32TBL	3.2	1.6	0.508	PO-X	Blue 	200	911-01415
SGP32TGYS	3.2	1.6	0.508	PO-X	Green -Yellow Stripe 	200	911-01417
SGP32TRD	3.2	1.6	0.508	PO-X	Red 	200	911-01418
SGP32TWT	3.2	1.6	0.508	PO-X	White 	200	911-01420
SGP32TYL	3.2	1.6	0.508	PO-X	Yellow 	200	911-01422
SGP48TBK	4.8	2.4	0.508	PO-X	Black 	100	911-01425
SGP48TBL	4.8	2.4	0.508	PO-X	Blue 	100	911-01427
SGP48TGYS	4.8	2.4	0.508	PO-X	Green / Yellow Stripe 	100	911-01429
SGP48TRD	4.8	2.4	0.508	PO-X	Red 	100	911-01430
SGP48TWT	4.8	2.4	0.508	PO-X	White 	100	911-01432
SGP48TYL	4.8	2.4	0.508	PO-X	Yellow 	100	911-01434
SGP64TBK	6.4	3.2	0.635	PO-X	Black 	100	911-01436
SGP64TBL	6.4	3.2	0.635	PO-X	Blue 	100	911-01438
SGP64TGYS	6.4	3.2	0.635	PO-X	Green / Yellow Stripe 	100	911-01440
SGP64TRD	6.4	3.2	0.635	PO-X	Red 	100	911-01441

### SGP, PO-X (Black and Colour)

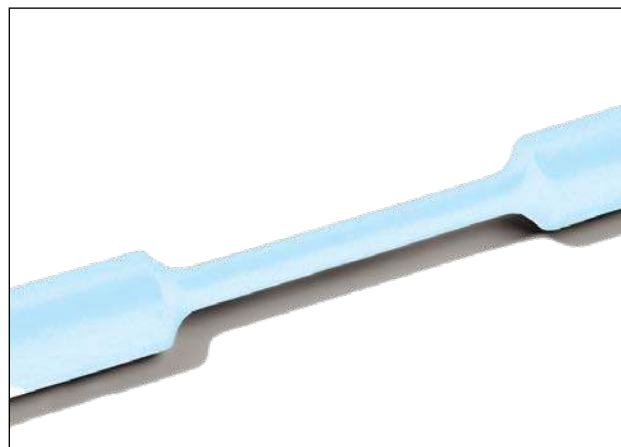
Type	Supplied IØ(D)	Recovery IØ(d)	Wall (WT) nom.	Material (p4)	Colour	Length (m)	Article-No.
SGP64TWT	6.4	3.2	0.635	PO-X	White 	100	911-01443
SGP64TYL	6.4	3.2	0.635	PO-X	Yellow 	100	911-01445
SGP95TBK	9.5	4.8	0.635	PO-X	Black 	100	911-01447
SGP95TBL	9.5	4.8	0.635	PO-X	Blue 	100	911-01449
SGP95TBN	9.5	4.8	0.635	PO-X	Brown 	100	911-01451
SGP95TGR	9.5	4.8	0.635	PO-X	Green 	100	911-01452
SGP95TGYS	9.5	4.8	0.635	PO-X	Green / Yellow Stripe 	100	911-01453
SGP95TRD	9.5	4.8	0.635	PO-X	Red 	100	911-01454
SGP95TWT	9.5	4.8	0.635	PO-X	White 	100	911-01456
SGP95TYL	9.5	4.8	0.635	PO-X	Yellow 	100	911-01458
SGP127TBK	12.7	6.4	0.635	PO-X	Black 	100	911-01460
SGP127TBL	12.7	6.4	0.635	PO-X	Blue 	100	911-01462
SGP127TBN	12.7	6.4	0.635	PO-X	Brown 	100	911-01464
SGP127TGYS	12.7	6.4	0.635	PO-X	Green / Yellow Stripe 	100	911-01465
SGP127TRD	12.7	6.4	0.635	PO-X	Red 	100	911-01466
SGP127TWT	12.7	6.4	0.635	PO-X	White 	100	911-01468
SGP127TYL	12.7	6.4	0.635	PO-X	Yellow 	100	911-01470
SGP190TBK	19	9.5	0.762	PO-X	Black 	100	911-01472
SGP190TBL	19	9.5	0.762	PO-X	Blue 	100	911-01474
SGP190TGYS	19	9.5	0.762	PO-X	Green / Yellow Stripe 	100	911-01476
SGP190TRD	19	9.5	0.762	PO-X	Red 	100	911-01477
SGP190TWT	19	9.5	0.762	PO-X	White 	100	911-01479
SGP190TYL	19	9.5	0.762	PO-X	Yellow 	100	911-01481
SGP254TBK	25.4	12.7	0.889	PO-X	Black 	50	911-01483
SGP254TBL	25.4	12.7	0.889	PO-X	Blue 	50	911-01486
SGP254TGYS	25.4	12.7	0.889	PO-X	Green / Yellow Stripe 	50	911-01489
SGP254TRD	25.4	12.7	0.889	PO-X	Red 	50	911-01490
SGP254TWT	25.4	12.7	0.889	PO-X	White 	50	911-01493
SGP254TYL	25.4	12.7	0.889	PO-X	Yellow 	50	911-01496
SGP381TGYS	38.1	19.1	1.020	PO-X	Green / Yellow Stripe 	100	911-01503
SGP508GYS	50.8	25.4	1.140	PO-X	Green / Yellow Stripe 	100	911-01504
SGP508TBK	50.8	25.4	1.140	PO-X	Black 50m 	100	911-01505
SGP508TBL	50.8	25.4	1.140	PO-X	Blue 50m 	100	911-01506
SGP508TGYS	50.8	25.4	1.140	PO-X	Green / Yellow Stripe 	100	911-01507
SGP508TRD	50.8	25.4	1.140	PO-X	Red 50m 	100	911-01508
SGP508TWT	50.8	25.4	1.140	PO-X	White 50m 	100	911-01509
SGP508TYL	50.8	25.4	1.140	PO-X	Yellow 50m 	100	911-01510
SGP762TBK	76.2	38.1	1.27	PO-X	Black 	50	911-01512
SGP762TBL	76.2	38.1	1.27	PO-X	Blue 	50	911-01513
SGP762TCL	76.2	38.1	1.27	PO-X	Clear 	50	911-01514
SGP762TRD	76.2	38.1	1.27	PO-X	Red 	50	911-01515
SGP762TWT	76.2	38.1	1.27	PO-X	White 	50	911-01516
SGP762TYL	76.2	38.1	1.27	PO-X	Yellow 	50	911-01517

All dimensions in mm. Subject to technical changes.

## Heatshrink Tubing 2:1

### SGP, PO-X (Transparent)

- Shrink ratio 2:1
- Operating temperature -55°C to 125°C
- Tensile strength test method ASTM-D-638 14N/mm<sup>2</sup>
- 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-2671kV/mm 20kV/mm
- Dielectric constant test method ASTM-D-150 3.0 max.
- Thermal stability
- Higher resistance to physical abuse
- Cost effective
- Effective electrical insulation and protection for in-line components, disconnect terminals and splices
- Bundles wires and cables for very flexible light-duty harnesses
- Strain-relief for electrical wire connections and colour-code wires, cables, terminals and components
- Not flame retardant



Transparent heatshrink

RoHS ✓

Type	Supplied IØ(D)	Recovery IØ(d)	Wall (WT) nom.	Material (p4)	Colour	Length (m)	Article-No.
CP16TCL	1.6	0.8	0.43	PO-X	Clear (CL) <input type="checkbox"/>	200	911-01991
CP24TCL	2.4	1.2	0.508	PO-X	Clear (CL) <input type="checkbox"/>	200	911-01373
CP32TCL	3.2	1.2	0.508	PO-X	Clear (CL) <input type="checkbox"/>	200	911-01375
CP48TCL	4.8	2.4	0.508	PO-X	Clear (CL) <input type="checkbox"/>	100	911-01377
CP64TCL	6.4	3.2	0.635	PO-X	Clear (CL) <input type="checkbox"/>	100	911-01379
CP95TCL	9.5	4.8	0.635	PO-X	Clear (CL) <input type="checkbox"/>	100	911-01381
CP127TCL	12.7	6.4	0.635	PO-X	Clear (CL) <input type="checkbox"/>	100	911-01383
CP190TCL	19	9.5	0.762	PO-X	Clear (CL) <input type="checkbox"/>	100	911-01385
CP254TCL	25.4	12.7	0.889	PO-X	Clear (CL) <input type="checkbox"/>	50	911-01387
CP508TCL	50.8	25.4	1.14	PO-X	Clear (CL) <input type="checkbox"/>	50	911-01391

All dimensions in mm. Subject to technical changes.

Other colours available on request (minimum order quantity required)

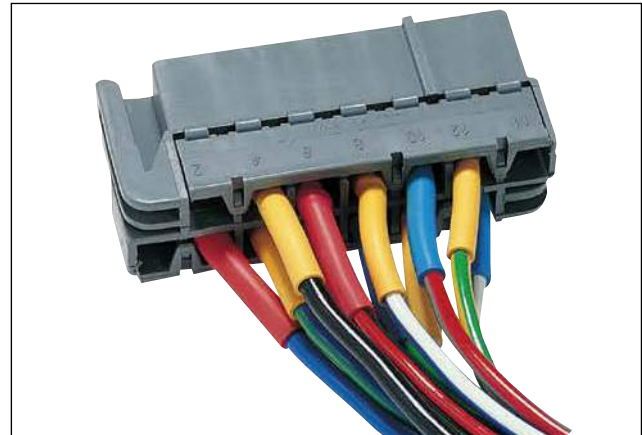
### Recommended Tools

Type			
	HG2120E	HL1920E	HL1821S
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### Heatshrink Tubing 2:1

#### HFT-A (Colour)

- Shrink ration 2:1
- Operating temperature -55°C to +135°C
- Intermittent +225°C
- Longitudinal change after shrinkage -5% max.
- Min. shrink temperature +100°C
- Insulation Class B (VDE 0530)
- Dielectric strength 20kV/mm according to IEC 684 P2
- Flammability Self extinguishing
- Fast shrinking and shrinks uniformly to form a permanent insulation covering
- Easy handling
- Good mechanical strength
- Resistance against chemicals and solvents
- Easy to print on sleeve marking to identify wiring circuits



HFT-A conforms to major standards used in all Defence industries



Type	Supplied IØ(D)	Recovery IØ(d)	Wall (WT) nom.	Materail (p4)	Colour
HFT-A 12	1.2	0.6	0.4	PO-X	Black (BK) ■ Blue (BL) ■ Red (RD) ■ White (WT) □ Yellow (YL) ■
HFT-A 16	1.6	0.8	0.4	PO-X	
HFT-A 24	2.4	1.2	0.5	PO-X	
HFT-A 32	3.2	1.6	0.5	PO-X	
HFT-A 48	4.8	2.4	0.5	PO-X	
HFT-A 64	6.4	3.2	0.6	PO-X	
HFT-A 95	9.5	4.8	0.6	PO-X	
HFT-A 127	12.7	6.4	0.6	PO-X	
HFT-A 190	19	9.5	0.8	PO-X	
HFT-A 254	25.4	12.7	0.9	PO-X	
HFT-A 380	38	19	1	PO-X	
HFT-A 508	50.8	25.4	1.1	PO-X	
HFT-A 760	76	38	1.3	PO-X	
HFT-A 1016	101.6	50.8	1.4	PO-X	

All dimensions in mm. Subject to technical changes.

#### Recommended Tools

Type			
	HG2120E	HL1920E	HL1821S
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#### Recommended Industries





## Flame Retardant Heatshrink Tubing 2:1

### HFT-B (Transparent)

- Shrink ratio 2:1
- Used for bundling cables
- Protection where visual inspection is required
- Used as a see through protective sleeve over cable markers



HFT-B

Type	Supplied IØ(D)	Recovery IØ(d)	Wall (WT) nom.	Material (p4)	Colour	Article-No.
HFT12TCL	1.2	0.6	0.4	PO-X	Transparent <input type="checkbox"/>	305-01219
HFT16TCL	1.6	0.8	0.4	PO-X	Transparent <input type="checkbox"/>	305-01619
HFT24TCL	2.4	1.2	0.5	PO-X	Transparent <input type="checkbox"/>	305-02419
HFT32TCL	3.2	1.6	0.5	PO-X	Transparent <input type="checkbox"/>	305-03219
HFT48TCL	4.8	2.4	0.5	PO-X	Transparent <input type="checkbox"/>	305-04819
HFT64TCL	6.4	3.2	0.6	PO-X	Transparent <input type="checkbox"/>	305-06419
HFT95TCL	9.5	4.8	0.6	PO-X	Transparent <input type="checkbox"/>	305-09519
HFT127TCL	12.7	6.4	0.6	PO-X	Transparent <input type="checkbox"/>	305-12719
HFT190TCL	19	9.5	0.8	PO-X	Transparent <input type="checkbox"/>	305-19019
HFT254TCL	25.4	12.7	0.9	PO-X	Transparent <input type="checkbox"/>	305-25419
HFT381TCL	38	19	1	PO-X	Transparent <input type="checkbox"/>	305-38119
HFT508TCL	50.8	25.4	1.1	PO-X	Transparent <input type="checkbox"/>	305-50819

All dimensions in mm. Subject to technical changes.

### Recommended Tools

Type			
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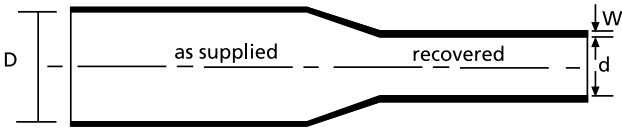
### Recommended Industries



### Flexible Heatshrink Tubing 3:1

#### HFT-333 (Black)

- Shrink ratio 3:1
- Continuous operating temperature -55°C to +135°C
- Intermittent temperature +225°C
- Min. shrink temperature +100°C
- Tensile strength 18MPa
- Elongation 500%
- Dielectric strength 25kV/mm
- Highly flexible, fast shrinking
- Excellent chemical and thermal resistance
- No tendency to split



HFT-333

RoHS

Type	Bore as supplied min.	Bore recovered max.	Wall thickness fully recovered (mm)	Material (p4)	Colour
HFT1505TBK	1.5	0.5	0.45	PO	Black (BK) ■
HFT31TBK	3	1	0.55	PO	Black (BK) ■
HFT62TBK	6	2	0.65	PO	Black (BK) ■
HFT93TBK	9	3	0.75	PO	Black (BK) ■
HFT124TBK	12	4	0.75	PO	Black (BK) ■
HFT186TBK	18	6	0.75	PO	Black (BK) ■
HFT248TBK	24	8	1.00	PO	Black (BK) ■
HFT3913TBK	39	13	1.15	PO	Black (BK) ■

All dimensions in mm. Subject to technical changes.

#### Recommended Industries



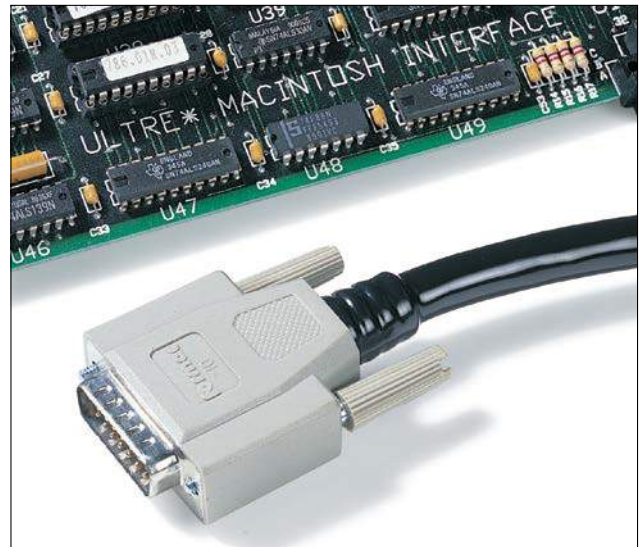
## Heatshrink Tubing 2:1

### TL27 (Black)

- Shrink ratio 2:1
- Operating temperature -55°C to +135°C
- Min. shrink temperature +90°C
- Longitudinal change after shrinkage +5%/-15%
- Dielectric strength >20 kV/mm
- Flammability FMVSS 302
- Very low shrink temperature
- Fast shrinking



Heat Shrinkable Tubing 2:1



Very flexible tubing for automotive or Industries where halogens cannot be accepted

HF ✓ RoHS ✓

Type	Supplied IØ(D) min.	Recovery IØ(d) max.	Size (Inches)	Wall (WT)	Colour	Material (p4)	Length (m)	Article-No.
TL27-1.2/0.6	1.2	0.6	3/64"	0.31	Black (BK) ■	PO-X	500	302-20120
TL27-1.6/0.8	1.6	0.8	1/16"	0.33	Black (BK) ■	PO-X	500	302-20160
TL27-2.4/1.2	2.4	1.2	3/32"	0.36	Black (BK) ■	PO-X	500	302-30240
TL27-3.2/1.6	3.2	1.6	1/8"	0.39	Black (BK) ■	PO-X	300	302-30320
TL27-4.8/2.4	4.8	2.4	3/16"	0.42	Black (BK) ■	PO-X	150	302-30480
TL27-6.4/3.2	6.4	3.2	1/4"	0.45	Black (BK) ■	PO-X	100	302-30640
TL27-9.5/4.8	9.5	4.8	3/8"	0.48	Black (BK) ■	PO-X	100	302-30950
TL27-12.7/6.4	12.7	6.4	1/2"	0.52	Black (BK) ■	PO-X	100	302-21270
TL27-19.1/9.5	19.1	9.5	3/4"	0.58	Black (BK) ■	PO-X	100	302-31900
TL27-25.4/12.7	25.4	12.7	1"	0.67	Black (BK) ■	PO-X	100	302-32540
TL27-38.1/19.1	38.1	19.1	1-1/2"	0.76	Black (BK) ■	PO-X	100	302-23810
TL27-50.8/25.4	50.8	25.4	2"	0.85	Black (BK) ■	PO-X	100	302-25080

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

### Recommended Tools

Type			
	HG2120E	HL1920E	HL1821S
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### Recommended Industries



## Heat Shrink Tubing 3:1

### TF34 (Transparent)

- Shrink ratio 3:1
- Operating temperature -55°C to +135°C
- Min. shrink temperature +110°C
- Longitudinal change after shrinkage -5% max.
- Dielectric strength 46kV/mm
- Not flame retardant
- Protects identification marking perfect
- Sizes cover wide range of diameters allowing reduced inventory



Transparent tubing with 3:1 shrink ratio allowing for a wider range of application



Heat Shrinkable Tubing 3:1

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Type	Supplied IØ(D) min.	Recov. IØ(d) max.	Wall (WT)	Colour	Material (p4)	Length (m)	Article-No.
TF34-1.5/0.5	1.5	0.5	0.5	Transparent (CL) <input type="checkbox"/>	PO-X	30	333-30153
TF34-3/1	3	1	0.5	Transparent (CL) <input type="checkbox"/>	PO-X	30	333-30303
TF34-6/2	6	2	0.7	Transparent (CL) <input type="checkbox"/>	PO-X	30	333-30603
TF34-9/3	9	3	0.8	Transparent (CL) <input type="checkbox"/>	PO-X	30	333-30903
TF34-12/4	12	4	0.85	Transparent (CL) <input type="checkbox"/>	PO-X	30	333-31203
TF34-18/6	18	6	1	Transparent (CL) <input type="checkbox"/>	PO-X	30	333-31803
TF34-24/8	24	8	1.2	Transparent (CL) <input type="checkbox"/>	PO-X	30	333-32403
TF34-40/13	40	13	1.25	Transparent (CL) <input type="checkbox"/>	PO-X	30	333-34003

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

### Recommended Tools

Type			
	HG2120E	HL1920E	HL1821S
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### Recommended Industries



## Heatshrink Tubing Adhesive Lined

### EPS-300, EPS-400 (Black)

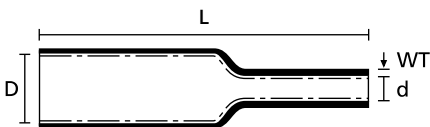
- Operating temperature -55°C to +125°C
- Min. shrink temperature +120°C
- Longitudinal change after shrinkage -10% max.
- Softening point adhesive +90°C
- Dielectric strength 15kV/mm according to IEC 684 P2
- Flammability ASTM D2671 (outer layer only)
- Flexible thin wall
- Coextruded hot melt adhesive inner wall
- Protects against moisture
- Provides an environmental sealing of complex parts



EPS300 and EPS400 offer high shrink ratios and protection against humidity

### EPS-300 - 3:1 Shrink Ratio

RoHS ✓

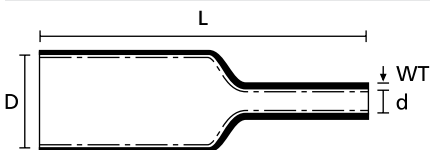


Heat Shrinkable Tubing 3:1 with adhesive

Type	Shrink Ratio	Supplied IØ(D) min.	Recovery IØ(d) max.	Wall (WT)	Colour	Material (p4)	Length (m)	Article-No.
EPS-300-3/1	3:1	3	1	1	Black (BK) ■	PO-X	400	340-03010
EPS-300-6/2	3:1	6	2	1	Black (BK) ■	PO-X	300	340-06020
EPS-300-9/3	3:1	9	3	1.4	Black (BK) ■	PO-X	150	340-09030
EPS-300-12/4	3:1	12	4	1.8	Black (BK) ■	PO-X	100	340-12040
EPS-300-19/6	3:1	19	6	2.2	Black (BK) ■	PO-X	50	340-19060
EPS-300-24/8	3:1	24	8	2.5	Black (BK) ■	PO-X	25	340-24080
EPS-300-40/13	3:1	40	13	2.5	Black (BK) ■	PO-X	25	340-40130

All dimensions in mm. Subject to technical changes.

### EPS-400 - 4:1 Shrink Ratio



Heat Shrinkable Tubing 4:1 with adhesive

Type	Shrink Ratio	Supplied IØ(D) min.	Recovery IØ(d) max.	Wall (WT)	Colour	Material (p4)	Length (m)	Article-No.
EPS-400-4/1	4:1	4	1	1	Black (BK) ■	PO-X	300	341-04010
EPS-400-8/2	4:1	8	2	1	Black (BK) ■	PO-X	150	341-08020
EPS-400-12/3	4:1	12	3	1.4	Black (BK) ■	PO-X	100	341-12030
EPS-400-16/4	4:1	16	4	1.8	Black (BK) ■	PO-X	100	341-16040
EPS-400-24/6	4:1	24	6	2.2	Black (BK) ■	PO-X	50	341-24060
EPS-400-32/8	4:1	32	8	2.5	Black (BK) ■	PO-X	25	341-32080

All dimensions in mm. Subject to technical changes.

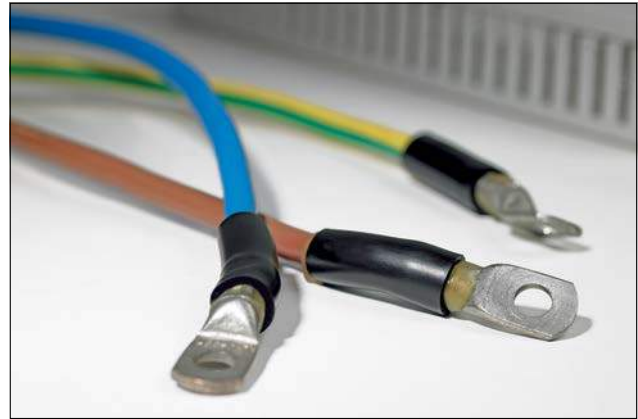
### Recommended Industries



### Heatshrinkable Tubing up to 3.5:1

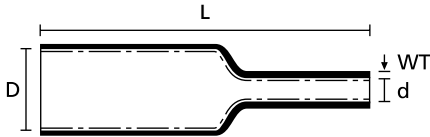
#### HA47: Thick Wall Adhesive Lined (Black)

- Shrink ratio 4:1
- Operating temperature -55°C to +110°C
- Min. shrink temperature +120°C
- Softening point adhesive +85°C
- Longitudinal change after shrinkage -10 % max.
- Dielectric strength 24,5 kV/mm
- Not flame retardant
- Insulation class A (VDE 0530)
- Thermoplastic adhesive protects against moisture and weathering
- Used for low voltage power applications



Heavy wall tubing.

HF ✓ RoHS ✓



Heat Shrinkable Tubing 3.5:1 with adhesive

Type	Supplied IØ(D) min.	Recovery IØ(d) max.	Wall (WT)	Length (L)	Material (p4)	Colour	Article-No.
HA47-9/3	9	3	1.8	1	PO-X	Black (BK) ■	321-20090
HA47-13/4	13	4	2.4	1	PO-X	Black (BK) ■	321-20130
HA47-19/6	19	6	2.7	1	PO-X	Black (BK) ■	321-20180
HA47-33/8	33	8	3.2	1	PO-X	Black (BK) ■	321-20280
HA47-45/12	45	12	4.1	1	PO-X	Black (BK) ■	321-20450
HA47-51/16	51	16	4.1	1	PO-X	Black (BK) ■	321-20510
HA47-68/22	68	22	4.1	1	PO-X	Black (BK) ■	321-20680
HA47-85/25	85	25	4.3	1	PO-X	Black (BK) ■	321-20850
HA47-105/30	105	30	4.3	1	PO-X	Black (BK) ■	321-20900
HA47-130/36	130	36	4.3	1	PO-X	Black (BK) ■	321-21300
HA47-160/50	160	50	4.3	1	PO-X	Black (BK) ■	321-21600
HA47-180/50	180	50	4.3	1	PO-X	Black (BK) ■	321-21850

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

#### Recommended Tools

Type			
	HG2120E	HL1920E	HL1821S
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#### Recommended Industries



### Heatshrink Tubing 3:1

#### IMCS-A: Adhesive Lined (Black)

- Shrink ratio 3:1
- Operating temperature -55°C to 110°C
- Longitudinal change after shrinkage -10% max.
- Min. shrink temperature +120°C
- Dielectric strength 20kV/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)
- Medium wall tubing
- Outstanding insulation and environmental sealing properties
- UV resistant
- Excellent mechanical properties
- Excellent impact and abrasion resistance
- High electrical insulation properties



IMCSA heatshrink tubing with a high (up to 4:1) shrink ratio

HF ✓ RoHS ✓



Heat shrinkable tubing 3:1

Type	Supplied IØ(D)	Recovery IØ(d)	Wall (WT) nom.	Wall (WT)	Adhesive Thickness (TA) nom.	Material (p4)	Colour	Article-No.
IMCSA123	12	3	2	2.7	0.7	PO-X	Black (BK) ■	911-01571
IMCSA196	19	6	2.5	3.3	0.8	PO-X	Black (BK) ■	911-01572
IMCSA278	27	8	2.5	3.3	0.8	PO-X	Black (BK) ■	911-01573
IMCSA3275	32	7.5	2.5	3.3	0.8	PO-X	Black (BK) ■	911-01574
IMCSA3812	38	12	2.5	3.3	0.8	PO-X	Black (BK) ■	911-01575
IMCSA5018	50	18	2.5	3.3	0.8	PO-X	Black (BK) ■	911-01576
IMCSA7026	70	26	2.5	3.3	0.8	PO-X	Black (BK) ■	911-01577
IMCSA9036	90	36	2.5	3.3	0.8	PO-X	Black (BK) ■	911-01578
IMCSA1204	120	40	2.5	3.3	0.8	PO-X	Black (BK) ■	911-01579

All dimensions in mm. Subject to technical changes.

#### Recommended Tools

Type			
	HG2120E	HL1920E	HL1821S
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### Heatshrink Tubing 2:1

#### Viton®-E: Fluoroelastomer (Black)

- Shrink ratio 2:1
- Operating temperature -55°C to +220°C
- Min. shrink temperature +175°C
- Longitudinal change after shrinkage -10% max.
- Dielectric strength 15 kV/mm
- Insulation Class C (VDE 0530)
- High temperature resistant fluoroelastomeric heatshrink 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

Type	Supplied IØ(D) min.	Recov. IØ(d) max.	Wall (WT)	Material (p4)	Colour	Designation as per VG-Norm	Length (m)	Article-No.
VITON®-E-3.2/1.6	3.2	1.6	0.7	PMX	Black (BK) ■	VG 95343 T05 E 001 A	50	330-00320
VITON®-E-4.8/2.4	4.8	2.4	0.8	PMX	Black (BK) ■	VG 95343 T05 E 002 A	50	330-00480
VITON®-E-6.4/3.2	6.4	3.2	0.9	PMX	Black (BK) ■	VG 95343 T05 E 003 A	50	330-00640
VITON®-E-9.5/4.8	9.5	4.8	1	PMX	Black (BK) ■	VG 95343 T05 E 004 A	25	330-00950
VITON®-E-12.7/6.4	12.7	6.4	1.2	PMX	Black (BK) ■	VG 95343 T05 E 005 A	25	330-01270
VITON®-E-19.0/9.5	19	9.5	1.4	PMX	Black (BK) ■	VG 95343 T05 E 006 A	25	330-01900
VITON®-E-25.4/12.7	25.4	12.7	1.8	PMX	Black (BK) ■	VG 95343 T05 E 007 A	25	330-02540
VITON®-E-38.0/19.0	38	19	2.4	PMX	Black (BK) ■	VG 95343 T05 E 008 A	15	330-03810
VITON®-E-50.8/25.4	50.8	25.4	2.8	PMX	Black (BK) ■	VG 95343 T05 E 009 A	15	330-05080

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

#### Recommended Tools

Type			
	HG2120E	HL1920E	HL1821S
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#### Recommended Industries





## Heatshrink Tubing for High Temperature 2:1

### TFE2 (Transparent)

- Shrink ratio 2:1
- Operating temperature -70°C to +260°C
- Min. shrink temperature +350°C
- Longitudinal change after shrinkage -20% max.
- Dielectric strength 40 kV/mm according to DIN 53481
- Non-burning
- Very high temperature resistance
- Extra thin wall translucent tubing
- High abrasion resistance and good resistance against aggressive chemicals



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

RoHS ✓



Heat Shrinkable Tubing 2:1

Type	Supplied IØ(D) min.	Recovery IØ(d) max.	Wire Size (AWG)	Wall (WT)	Material (p4)	Colour	Length (m)	Article-No.
TFE2-30	0.86	0.38	30	0.23	PTFE	Transparent (CL) <input type="checkbox"/>	1.2	336-00079
TFE2-28	0.96	0.46	28	0.23	PTFE	Transparent (CL) <input type="checkbox"/>	1.2	336-00099
TFE2-26	1.17	0.56	26	0.23	PTFE	Transparent (CL) <input type="checkbox"/>	1.2	336-00109
TFE2-24	1.27	0.69	24	0.25	PTFE	Transparent (CL) <input type="checkbox"/>	1.2	336-00139
TFE2-22	1.39	0.82	22	0.25	PTFE	Transparent (CL) <input type="checkbox"/>	1.2	336-00149
TFE2-20	1.52	0.99	20	0.30	PTFE	Transparent (CL) <input type="checkbox"/>	1.2	336-00159
TFE2-18	1.93	1.25	18	0.30	PTFE	Transparent (CL) <input type="checkbox"/>	1.2	336-00199
TFE2-16	2.36	1.55	16	0.30	PTFE	Transparent (CL) <input type="checkbox"/>	1.2	336-00249
TFE2-14	3.05	1.83	14	0.30	PTFE	Transparent (CL) <input type="checkbox"/>	1.2	336-00319
TFE2-12	3.81	2.26	12	0.30	PTFE	Transparent (CL) <input type="checkbox"/>	1.2	336-00399
TFE2-10	4.85	2.85	10	0.30	PTFE	Transparent (CL) <input type="checkbox"/>	1.2	336-00489
TFE2-8	6.10	3.58	8	0.38	PTFE	Transparent (CL) <input type="checkbox"/>	1.2	336-00619
TFE2-6	7.67	4.52	6	0.38	PTFE	Transparent (CL) <input type="checkbox"/>	1.2	336-00779
TFE2-4	9.40	5.69	4	0.38	PTFE	Transparent (CL) <input type="checkbox"/>	1.2	336-00949
TFE2-2	10.92	7.06	2	0.38	PTFE	Transparent (CL) <input type="checkbox"/>	1.2	336-01109
TFE2-0	11.94	8.81	0	0.38	PTFE	Transparent (CL) <input type="checkbox"/>	1.2	336-01209

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

### Recommended Tools

Type			
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### Recommended Industries

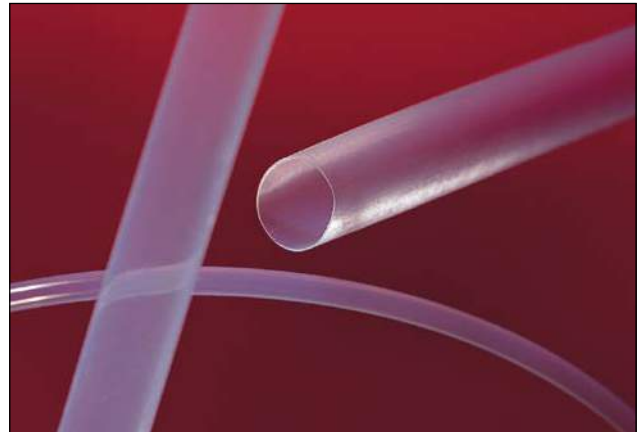


**NSA**

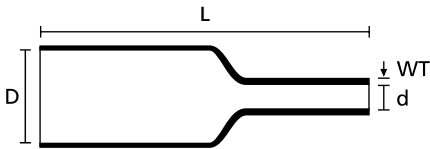
### Heatshrink Tubing for High Temperature 4:1

#### TFE4 (Transparent)

- Shrink ratio 4:1
- Used for bundling and cables
- Protection where visual inspection is required
- Used as a see through protective sleeve over cable markers



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



Heat Shrinkable Tubing 4:1

RoHS ✓

Type	Supplied IØ(D) min.	Recovery IØ(d) max.	Size (Inches)	Wall (WT)	Material (p4)	Colour	Length (m)	Article-No.
TFE4-5/64	1.98	0.64	5/64"	0.22	PTFE	Transparent (CL) <input type="checkbox"/>	1.2	339-00209
TFE4-1/8	3.17	0.94	1/8"	0.25	PTFE	Transparent (CL) <input type="checkbox"/>	1.2	339-00329
TFE4-3/16	4.75	1.27	3/16"	0.30	PTFE	Transparent (CL) <input type="checkbox"/>	1.2	339-00340
TFE4-1/4	6.35	1.6	1/4"	0.30	PTFE	Transparent (CL) <input type="checkbox"/>	1.2	339-00649
TFE4-3/8	9.52	2.44	3/8"	0.30	PTFE	Transparent (CL) <input type="checkbox"/>	1.2	339-00959
TFE4-1/2	12.7	3.66	1/2"	0.38	PTFE	Transparent (CL) <input type="checkbox"/>	1.2	339-01279
TFE4-5/8	15.87	4.52	5/8"	0.38	PTFE	Transparent (CL) <input type="checkbox"/>	1.2	339-01599
TFE4-3/4	19.05	5.69	3/4"	0.38	PTFE	Transparent (CL) <input type="checkbox"/>	1.2	339-01909
TFE4-1	25.4	7.06	1"	0.38	PTFE	Transparent (CL) <input type="checkbox"/>	1.2	339-02549
TFE4-1 1/4	31.75	8.82	1-1/4"	0.38	PTFE	Transparent (CL) <input type="checkbox"/>	1.2	339-03189

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

#### Recommended Tools

Type			
	HG2120E	HL1920E	HL1821S
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#### Recommended Industries



NSA

## Heatshrink Tubing 2:1

### TR27 - Flame Retardant (Black)

- Shrink ratio 2:1
- Operating temperature -40°C to +105°C
- Min. shrink temperature +115°C
- Longitudinal change after shrinkage +5%/-10% max.
- Dielectric strength 15 kV/mm according to IEC 684 P2
- Flammability: Low generation of toxic gases and corrosive acid, low smoke generation
- Thin wall
- Available with adhesive or thick wall version (SR27) on request



TR27 is ideal for safety sensitive areas

HF ✓ RoHS ✓ LFH ✓



Heat Shrinkable Tubing 2:1

Type	Supplied IØ(D) min.	Recov. IØ(d) max.	Size (Inches)	Wall (WT)	Material (p4)	Colour	Length (m)	Article-No.
TR27-3.2/1.6	3.2	1.6	1/8"	0.51	PO-X	Black (BK) ■	150	315-50320
TR27-4.8/2.4	4.8	2.4	3/16"	0.51	PO-X	Black (BK) ■	60	315-50480
TR27-6.4/3.2	6.4	3.2	1/4"	0.64	PO-X	Black (BK) ■	60	315-50640
TR27-9.5/4.8	9.5	4.8	3/8"	0.64	PO-X	Black (BK) ■	60	315-50950
TR27-12.7/6.4	12.7	6.4	1/2"	0.64	PO-X	Black (BK) ■	60	315-51270
TR27-19.1/9.5	19.1	9.5	3/4"	0.76	PO-X	Black (BK) ■	60	315-51900
TR27-25.4/12.7	25.4	12.7	1"	0.51	PO-X	Black (BK) ■	60	315-52540
TR27-38.1/19.1	38.1	19.1	1-1/2"	1.02	PO-X	Black (BK) ■	60	315-53810
TR27-50.8/25.4	50.8	25.4	2"	1.14	PO-X	Black (BK) ■	60	315-55100

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

### Recommended Tools

Type			
	HG2120E	HL1920E	HL1821S
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### Recommended Industries



EN 45545-2 DEF STAN

## Heatshrink Tubing Adhesive Lined 4:1

### SA47, SA47-LA, SA47-HT (Black and Clear)

- Shrink ratio 4:1
- Operating temperature -40°C to +125°C
- Min. shrink temperature +110°C
- Melting point starting from +110°C
- Longitudinal change after shrinkage -10% max.
- Dielectric strength >20 kV/mm
- Flexible, standard wall polyolefin heat shrink tubing
- Excellent tensile strength and strain relief
- Provides excellent moisture protection
- Tubing is clear and hot melt adhesive black
- Provides an environmental sealing of complex parts
- Cut lengths available on request, MOQ required



Heatshrink tubing SA47 for splice application



Heat Shrinkable Tubing 4:1

HF ✓ RoHS ✓



Developed with our Automotive partners to eliminate risk of corrosion around cable splices and terminations

### SA47: Standard Wall (Black)

Type	Supplied Ø(D) min.	Recovery Ø(d) max.	Wall (WT)	Material	Colour	Length (m)	Article-No.
SA47 5,75/1,25	5.75	1.25	1.15	PO-X	Clear (CL) <input type="checkbox"/>	1.2m	301-10000
SA47 7,5/1,65	7.5	1.65	1.40	PO-X	Clear (CL) <input type="checkbox"/>	1.2m	301-10001
SA47 11,0/2,4	11.0	2.4	1.80	PO-X	Clear (CL) <input type="checkbox"/>	1.2m	301-10002
SA47 18,3/4,35	18.3	4.35	2.20	PO-X	Clear (CL) <input type="checkbox"/>	1.2m	301-10003
SA47 24/6	24.0	6.0	2.54	PO-X	Clear (CL) <input type="checkbox"/>	1.2m	301-10005
SA47 32/8	32.0	8.0	2.54	PO-X	Clear (CL) <input type="checkbox"/>	1.2m	301-10004

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

### SA47-LA: Standard Wall (Black)

- Specially designed with less adhesive for cable connections



Type	Supplied Ø(D) min.	Recovery Ø(d) max.	Wall (WT)	Length (m)	Colour	Article-No.
SA47-LA 5,75/1,25	5.75	1.25	1.15	1.2m	Clear (CL) <input type="checkbox"/>	301-10020
SA47-LA 7,5/1,65	7.5	1.65	1.40	1.2m	Clear (CL) <input type="checkbox"/>	301-10021
SA47-LA 11,0/2,4	11.0	2.4	1.80	1.2m	Clear (CL) <input type="checkbox"/>	301-10022
SA47-LA 18,3/4,35	18.3	4.35	2.20	1.2m	Clear (CL) <input type="checkbox"/>	301-10023
SA47-LA 24/6	24.0	6.0	2.54	1.2m	Clear (CL) <input type="checkbox"/>	301-10024
SA47-LA 32/8	32.0	8.0	2.54	1.2m	Clear (CL) <input type="checkbox"/>	301-10025
SA47-LA 52/13	52.0	13.0	3.00	1.2m	Clear (CL) <input type="checkbox"/>	301-10026

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

### Recommended Industries

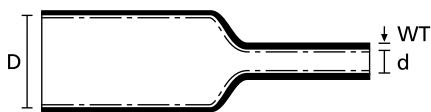


## SA47-HT – Standard Wall (Black)

- Operating temperature -40°C to +150°C
- Min. shrink temperature +130°C
- Melting point starting from +120°C
- High temperature applications up to 150°C
- Flame retardant
- Flexible, standard wall polyolefin heat shrink tubing
- Excellent tensile strength and strain relief
- Provides excellent moisture protection
- Tubing is clear and hot melt adhesive black
- Provides an environmental sealing of complex parts
- Cut lengths available on request, MOQ required



Provides optimum protection against moisture in high temperature applications



Heat Shrinkable Tubing 4:1 with adhesive

RoHS ✓

Type	Supplied IØ(D) min.	Recovery IØ(d) max.	Wall (WT)	Material	Colour	Length (m)	Article-No.
SA47-HT 7,6/1,7	7.6	1.7	1.52	PO-X	Black (BK) ■	1.2m	301-10010
SA47-HT 9,0/2,3	9.0	2.3	1.52	PO-X	Black (BK) ■	1.2m	301-10011
SA47-HT 11,6/2,5	11.6	2.5	2.29	PO-X	Black (BK) ■	1.2m	301-10012
SA47-HT 17,8/4,4	17.8	4.4	2.54	PO-X	Black (BK) ■	1.2m	301-10013
SA47-HT 24/6	24.0	6.0	2.54	PO-X	Black (BK) ■	1.2m	301-10015
SA47-HT 32/8	32.0	8.0	2.54	PO-X	Black (BK) ■	1.2m	301-10014

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

### Recommended Industries



### Straight-Through and Branch Gel Cable Joints with Connectors

#### RELICON Relilight, PA66V0 and SI (Black)

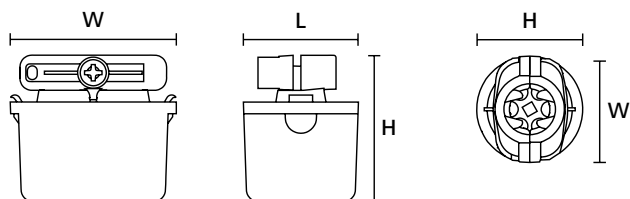
- Operating temperature -30°C to +130°C
- Voltage 250V
- Depends on connector type, used either for straight-through or branch joints
- Designed for low-voltage electrical networks such as light installations, including LED
- Flame retardant shell moulds (UL94 VO)
- Suitable for jointing polymeric cables and wires (e.g. PVC, XLPE, PE, EPR)
- Silicone based gel provides excellent insulation properties
- UV and weather resistant
- Resistant to ageing
- Unlimited storage life
- Simple and effortless to install and can be reopened after use
- Uses include indoor and outdoor lightning, underground, submerged and in wiring ducts
- Certification EN 60998-2-1: 2004



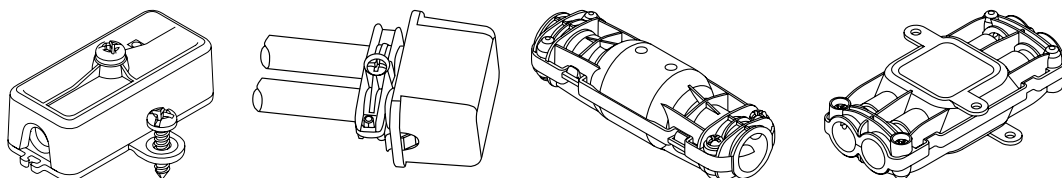
RoHS

IP68 (1.3m)

**i** With connector!



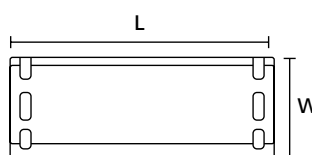
Type	Ø Main Cable	Main Cable (mm <sup>2</sup> )		Branch Cable (mm <sup>2</sup> )		Voltage (V)	Length (L)	Width (W)	Height (H)	Article-No.
		Min	Max	Min	Max					
Relilight V2.7511	4.8-6	2x0.35	2x0.75			250	44	18	17.5	435-01650
Relilight V31.5U1	8.0-10	3x0.5	3x1.5			250	38	42.5	29.5	435-01653
Relilight V32.5I2	6.5-12	3x0.5	3x2.5			250	100	24	29	435-01651
Relilight V32.5P1	6.5-12	3x0.5	3x2.5	3x0.5	3x2.5	250	105	44	24	435-01655
Relilight V34P2	7.5-16	3x1.5	3x4	3x1.5	3x4	450	138	78	35	435-01657
Relilight V36P2	7.5-16	3x1.5	3x6	3x1.5	3x6	450	138	78	35	435-01658
Relilight V41.5P1	6.5-12	4x0.5	4x1.5	4x0.5	4x1.5	250	105	44	24	435-01656
Relilight V41U1	8.0=10	6x0.35	6x0.5			250	38	42.5	29.5	435-01654
Relilight V61.5I2	6.5-12	6x0.5	6x1.5			250	100	24	29	435-01652



## Straight-Through Gel Cable Joints with Connectors

### RELICON Relifix V, PI and SI (Green)

- Operating temperature -20°C to +90°C
- Shell: one piece, coloured, re-openable, impact-proof, flame retardant
- Filled with Relicon non-toxic gel, high dielectric strength
- No mixing, easy to install
- UV, ageing and weather resistant
- Unlimited shelf-life
- With connector, ready for assemble
- Tested according to EN 50393 (corresponds to DIN VDE 0278-393)
- IPX8 tested
- Suitable for jointing polymeric cables and wires (e.g. PVC, XLPE, PE, EPR)
- Uses include indoor and outdoor lightning, underground, submerged and in wiring ducts
- Silicone based gel provides excellent insulation properties



Type	Ø Main Cable	Main Cable (mm <sup>2</sup> )		Branch Cable (mm <sup>2</sup> )		Length (L)	Width (W)	Height (H)	Article-No.
		Min	Max	Min	Max				
<b>Relifix V31.5</b>	9-16	3x0.5	3x2.5			86	47	27	435-00650
<b>Relifix V56</b>	9-20	3x1.5	5x6			146	55	35	435-00654
<b>Relifix V150</b>	9-16	1x10	1x50	1x2.5	1x6	86	47	27	435-00651
<b>Relifix V516</b>	9-22	3x6	5x16			180	69	40	435-00655
<b>Relifix V525</b>	9-30	3x16	5x25			240	75	48	435-00656

## Straight-Through Gel Cable Joints with Connectors

### RELICON Reliseal V, PP and SI (Green)

- Operating temperature -20°C to +90°C
- Moulding shell: one piece, re-openable, impact-proof, flame retardant
- Perfect strain relief provided by patented cable gland system
- Filled with RELICON non-toxic gel, high dielectric strength
- No mixing, easy to install
- UV, ageing and weather resistant
- Unlimited shelf-life
- With connector, ready to assemble
- Tested according to EN 50393 and EN 60529
- Suitable for jointing polymeric cables and wires (e.g. PVC, XLPE, PE, EPR)
- Uses include indoor and outdoor lightning, underground, submerged and in wiring ducts



RoHS ✓

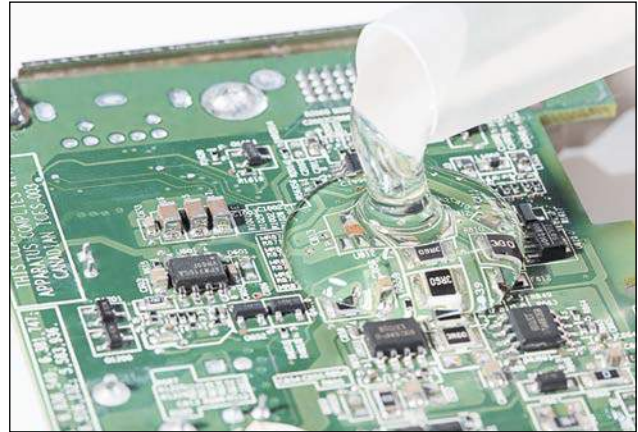
**IP88** (10m)

Type	Ø Main Cable	Main Cable (mm <sup>2</sup> )		Length (L)	Width (W)	Height (H)	Article-No.
		Min	Max				
<b>Reliseal V56</b>	12-18	3x2.5	5x6	190	60	47	435-01660
<b>Reliseal V510</b>	14-21	3x4	5x10	235	69	49	435-01661
<b>Reliseal V525</b>	20-30	3x10	5x25	310	88	60	435-01662

### RELICON Two-Component Gel

#### RELICON Religel

- Operating temperature -60°C to +200°C
- Dielectric Strength (kV/mm): >25
- Viscosity: 1000 mPa\*s, 23 °C (EN ISO 2555)
- Density: 0.97 g/cm<sup>3</sup>, 20 °C (DIN EN ISO 2811-2)
- Unlimited shelf-life
- Multiple use possible, mixing ratio 1:1
- Excellent flow and insulating properties
- Excellent moisture and chemical resistance
- Soft elastic, vibration absorbing and removable residue-free



#### RELICON Religel Clear, SI (Transparent)

HF ✓ RoHS ✓

- Soft elastic two-component silicone gel
- Optimal visual control through transparent material
- Crystal clear gel after curing, excellent insulating properties, suitable for LED applications, circuit boards and electrical connectors (below ground or submerged)

Type	Material	Colour	Size (ml)	Article-No
Religel Clear 500	SI	Clear (CL)	500	435-00757
Religel Clear 1.000	SI	Clear (CL)	1000	435-00754

#### RELICON Religel Plus, SI (Transparent and Green)

HF ✓ RoHS ✓

- Timesaving due to fast curing time
- Stable up to 200 °C
- Visual control of the homogenous mixture indicated by green-coloured component B

Type	Material	Colour	Size (ml)	Article-No
Religel Plus 500	SI	Clear (CL), Green (GR)	500	435-00756
Religel Plus 1.000	SI	Clear (CL), Green (GR)	1000	435-00752
Religel Plus 10.000	SI	Clear (CL), Green (GR)	10 000	435-00753





### HG2120E - Professional Steinel Heat Gun

- Thermal cutout
- Temperature indication by thumb wheel in 9 steps

#### Technical Overview

Output	2200W
Operation hours	750
Temperature (°C)	80 – 630
Airflow rate (3 steps)	150-500l/min
Heating element	Ceramic
Protection class (without earth terminal)	II
Weight (g)	670

#### Model Specification



Optional Accessories	<b>NOZREF</b> Reflector Nozzle, <b>NOZSUR50</b> 50mm Surface Nozzle, <b>NOZRED9</b> 9mm Reduction Nozzle, <b>NOZRED14</b> Nozzle Reducer 14mm, <b>NOZREF10</b> Nozzle Solder Reflector 10mm, <b>NOZSUR75</b> Nozzle Shaping Surface 75mm, <b>NOZWIDE14</b> Nozzle Welding Wide-Slit 14mm
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### HL1920E – Steinel Heat Gun

- 9 step thumb wheel temperature adjustment
- Thermal fuse

#### Technical Overview

Output	2000W
Operation hours	600
Temperature (°C)	80 – 600
Airflow rate (3 steps)	150-500l/min
Heating element	Ceramic
Protection class (without earth terminal)	II
Weight (g)	840



#### Model Specification

Optional Accessories	<b>NOZREF</b> Reflector Nozzle, <b>NOZSUR50</b> 50mm Surface Nozzle, <b>NOZRED9</b> 9mm Reduction Nozzle, <b>NOZSUR75</b> Nozzle Shaping Surface 75mm
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### HL1821S - DIY Steinel Heat Gun

- Thermal fuse
- Two step heating setting

#### Technical Overview

Output	1800W
Operation hours	600
Temperature (°C)	300 or 550
Airflow rate	350 or 450l/min
Heating element	Micanite
Protection class (without earth terminal)	II
Weight (g)	717



#### Model Specification

Optional Accessories	<b>NOZREF</b> Reflector Nozzle, <b>NOZSUR50</b> 50mm Surface Nozzle, <b>NOZRED9</b> 9mm Reduction Nozzle
----------------------	--



### 2.3 Heat Shrinkable Moulded Shapes

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## Materials for Heat Shrinkable Moulded Shapes

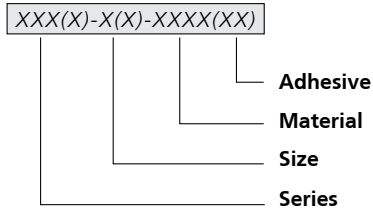
Material Specifications						
	-9	H	G	B7	B8	L
<b>Material</b>	Modified elastomer blend	Flexible limited fire hazard material	Fluid resistant elastomer	Semi-rigid flame retarded polyolefin	Semi-rigid flame retarded polyolefin	Flexible flame retarded fluoroelastomer
<b>Operating Temperature</b>	-55°C to +120°C	-55°C to +105°C	-75°C to +150°C	-55°C to +135°C	-55°C to +100°C	-55°C to +200°C
<b>Min. Shrink Temperature</b>	+135°C	+135°C	+135°C	+135°C	+135°C	+175°C
<b>Specifications</b>	SCX15112	DEF STAN 59-97, BSG198 Part 5, VG 95343 NAVSEA 5617649	DEF STAN 59-97, BSG198 Part 5, VG 95343 Part 6, 18	MIL-I-81765/1 Type 1, DEF STAN 59-97, BSG198 Part 5	EA-TS 09-11	DEF STAN 59-97, BSG198 Part 5, MIL-81765/4
<b>Tensile Strength</b>	12 MPa	10 MPa	15 MPa	13 MPa	15 MPa	12 MPa
<b>Elongation at break</b>	500%	450%	580%	500%	500%	300%
<b>Dielectric Strength</b>	24,5 kV/mm	15 kV/mm	14 kV/mm	14 kV/mm	15 kV/mm	8 kV/mm
<b>Flammability for Material</b>	excellent	excellent	excellent	excellent	good	excellent
<b>Features and benefits</b>	Good physical and reasonable chemical resistance	Low smoke Halogen free	Excellent resistance to fuels	Good physical and chemical resistance	Good physical and reasonable chemical resistance	High temperature excellent chemical resistance
<b>Typical Application</b>	Military and general high performance harnessing	Ships, submarines & railways	Military and general high performance harnessing	Military and general high performance harnessing	Power/utility shapes	Military and high performance harnessing

## Adhesive for Heat Shrinkable Moulded Shapes

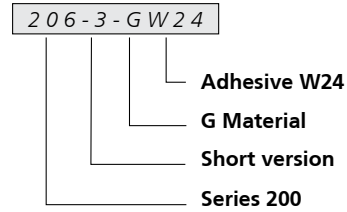
Adhesive Specifications							
	W / W2	W8	W21	W24	WM250	V9500	HMT200A
<b>Adhesive</b>	Hot melt adhesive	Hot melt adhesive	Hot melt adhesive	Hot melt adhesive	Hot melt adhesive	Two part, black, epoxy adhesive	Hot melt adhesive tape
<b>Operating Temperature</b>	-55°C to +80°C	-55°C to +105°C	-55°C to +120°C	-75°C to +200°C	-55°C to +80°C	-75°C to +150°C	-55°C to +105°C
<b>Softening Point Adhesive</b>	+95°C	+110°C	+120°C		+95°C		+110°C
<b>Supplied Form</b>	pre-applied	pre-applied	pre-applied	pre-applied	pre-applied	cardridge	tape
<b>Shelf Life</b>	5 years	5 years	5 years	5 years	5 years	18 months	5 years
<b>Solvent Resistance</b>	Fair under splash conditions	Fair under splash conditions	Saline: Very good De-icing fluid: Good Diesel: Excellent Lubricating Oil: Good Hydraulic Oil: Excellent Aviation Fuel: Good Automotive Fuel: Good	De-icing fluid: Excellent Petrol: Excellent Lubricating Oil: Excellent Hydraulic Oil: Excellent	Fair under splash conditions	De-icing fluid: Excellent, Petrol: Excellent, Lubricating Oil: Excellent, Hydraulic Oil: Excellent	Fair under splash conditions

### Order Example

Type:



Example:



### Bulbous Boots Product Overview

Bottle Shapes Helashrink 150 Series, with rib, VG	
Bottle Shapes Helashrink 100 Series, without rib	
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	
Bottle Shapes Helashrink 190 Series, with external ribs, VG	
2-Way Outlet Shapes Helashrink 200 Series, low profile	
2-Way Outlet Shapes Helashrink 200 Series, VG	
3-Way Outlet Shapes Helashrink 300 Series, VG	
4-Way Outlet Shapes Helashrink 400 Series, VG	
Right-Angle Shapes Helashrink 1100 Series, with rib, VG	
Right-Angle Shapes Helashrink 1100 Series, without rib	

### Bulbous Boots Product Overview

Right-Angle Shapes Helashrink 1100 Series, with rib, MIL	
Right-Angle Shapes Helashrink 1100 Series, with rib, low profile, VG style/MIL style	
Right-Angle Shapes Helashrink 1100 Series, with rib, low profile, high ratio, VG	
T-Shapes Helashrink 1200 Series, VG	
T-Shapes Helashrink 1200 Series, Offset, VG	
Angled T-Shapes Helashrink 1300 Series, 30° & 45° angle, VG	
2-Way Outlet Shapes Helashrink 200 Series, in line, low voltage	
4-Way Outlet Shapes Helashrink 400 Series, in line, low voltage	
5-Way Outlet Shapes Helashrink 500 Series, in line, low voltage	

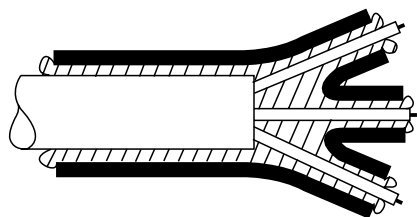
## Hot Melt Tape for Heatshrink Tubing and Shapes

### HMT200A

- Operating temperature -55°C to +105°C
- Designed for use with heatshrink sleeving and mouldings
- Hot melt tape flows when heated to seal against moisture



Hot melt tape



HMT200A



Adhesive tape HMT200A for sealing against humidity

HF ✓ RoHS ✓

Type	Thickness (T)	Width (W)	Material (p4)	Colour	Length (m)	Article-No.
HMT200A	0.25	25	EVA	Translucent (TT) <input type="checkbox"/>	10	354-02260
	0.25	25	EVA	Translucent (TT) <input type="checkbox"/>	50	354-02259

All dimensions in mm. Subject to technical changes.

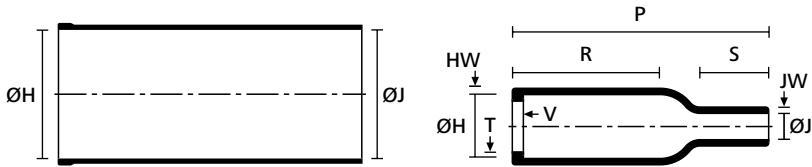
### Bottle Shapes, MIL Style

#### Helashrink 100 Series, with Rib

- With circular grooved adaptor for strain relief
- Combine with complimentary adhesives for environmental sealing
- Suitable for small cable diameters



100 Series supplied / fully recovered



a: Expanded form (supplied)

b: Fully recovered form (after heating)

Type	ØH min. a	ØH max. b	ØJ min. a	ØJ max. b	P ± 10 %	R ± 10 %	HW ± 20 %	JW ± 20 %	V ± 10 %	T ± 20 %	S nom.	Article-No.
113-4-G	10.7	7.9	4.6	2.0	25.4	14.5	1.3	1	3	1	4.6	401-13480

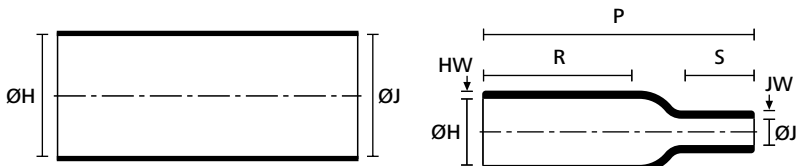
All dimensions in mm. Subject to technical changes.

#### Helashrink 100 Series, without rib

- Strain relief for connector cable
- Easy re-entry for repair when combined with hot melt adhesive
- For mechanical protection and protection against environment impacts



100 Series supplied / fully recovered



a: Expanded form (supplied)

b: Fully recovered form (after heating)

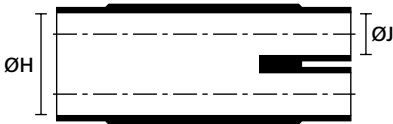
Type	ØH min. a	ØH max. b	ØJ min. a	ØJ max. b	P ± 10 %	R max.	HW ± 20 %	JW ± 30 %	S nom.	Article-No.
113-1-G	10.7	7.9	4.6	2	25.4	14.5	1.3	1	4.6	401-13180

All dimensions in mm. Subject to technical changes.

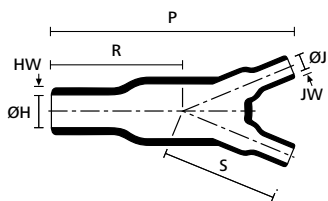
## 2-Way Outlet Shapes, VG Style

### Outlet Shapes

- Mechanical tension relief in cable harnesses



a: Expanded form (supplied)



b: Fully recovered form (after heating)



203-1 Supplied / fully recovered

Type	ØH min. a	ØH max. b	ØJ min. a	ØJ max. b	P ± 10 %	R ± 10 %	HW ± 20 %	JW nom.	S nom.	Designation as per VG-Norm	Article-No.
206-1-G	13	6	7	3	41	19	1.5	1	19	VG 95343 T08 C 001 A	402-06180
212-1-G	14.5	8	8.5	5.5	136	83	2.3	2	63	VG 95343 T08 C 005 A	402-12180
213-1-G	17.3	7.9	11.1	7.9	140	83.1	2.3	1	64	-	402-13180
203-1-G	27	12	13	6	80	38	2.5	1.5	43	VG 95343 T08 C 002 A	402-03180
204-1-G	39	18	27	12	66	81	3.1	2.5	81	VG 95343 T08 C 003 A	402-04180

All dimensions in mm. Subject to technical changes.

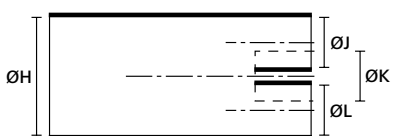
## 3-Way Outlet Shapes, VG Style

### Helashrink 300 Series

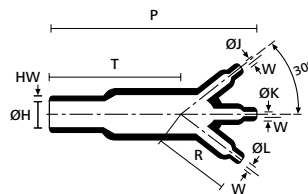
- Cable strain relief and mechanical protection at harness transition points
- All outlets clearly marked to aid orientation during installation



304-1-G Supplied / fully recovered



a: Expanded form (supplied)



b: Fully recovered form (after heating)

Type	ØH min. a	ØH max. b	ØJ/K/L min. a	ØJ/K/L max. b	P ± 10 %	R ± 10 %	HW ± 30 %	W ± 20 %	T ± 10 %	Designation as per VG-Norm	Article-No.
306-1-G	13	6.5	6.5	3.5	46	25.4	1.3	1	20.3	VG 95343 T08 D 001 A	403-06180
304-1-G	27	13.5	13	7	93	50.3	2.5	1.5	42.9	VG 95343 T08 D 002 A	403-04180
310-1-G	38.5	19	19	10	135	73.7	3	1.8	61	VG 95343 T08 D 003 A	403-10180
311-1-G	55.5	25.5	27	12.5	192	103.1	4.6	3.1	88.9	VG 95343 T08 D 004 A	403-11180

All dimensions in mm. Subject to technical changes.



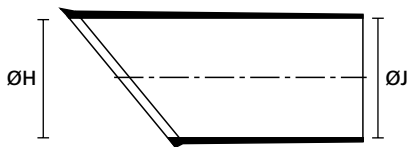
### Right-Angle Shapes, VG Style

#### Helashrink 1100 Series, with Rib

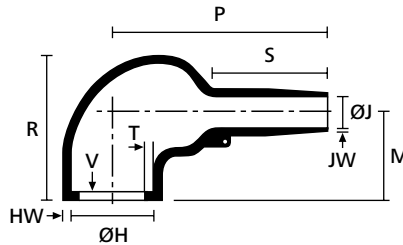
- Used in conjunction with a circular grooved adaptor
- Provides strain relief and an environmental seal



1152-4-G Recovered onto a connector



a: Expanded form (supplied)



b: Fully recovered form (after heating)

Type	ØH min. a	ØH max. b	ØJ min. a	ØJ max. b	P ± 10 %	R ± 10 %	HW ± 20 %	JW ± 20 %	V max.	T ± 20 %	M nom.	S nom.	Designation as per VG-Norm	Article-No.
1152-4-G	24	10.5	24	6	32	25	1.3	0.5	3.3	1	19	10	VG 95343 T06 E 001 A	411-52480
1154-4-G	30	14.5	30	6	41	27	1.5	0.8	3.3	1	19	12	VG 95343 T06 E 002 A	411-54480
1155-4-G	31	18	31	7	51	31	1.8	1	3.3	1	21	15	VG 95343 T06 E 003 A	411-55480
1156-4-G	36	22.5	36	8.5	59	38	1.8	1	3.3	1	26	15	VG 95343 T06 E 004 A	411-56480
1157-4-G	43	28.5	43	10	71	45	2	1	3.3	1.7	30	16	VG 95343 T06 E 005 A	411-57480
1158-4-G	60	35	60	16	80	54	3.3	1.5	3.3	1.7	35	30	VG 95343 T06 E 006 A	411-58480
1159-4-G	66	45	66	17	108	68	3.8	2	3.3	2	42	51	VG 95343 T06 E 007 A	411-59480
1160-4-G	82	61	82	25	118	84	4	4	3.3	2	52	39	VG 95343 T06 E 008 A	411-60480

All dimensions in mm. Subject to technical changes.

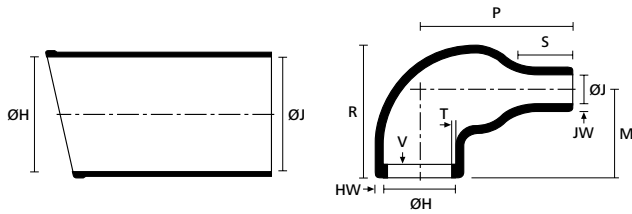




### Right-Angle Shapes, MIL Style

#### Helashrink 1100 Series, with Rib

- Used in conjunction with a circular grooved adaptor for strain relief



a: Expanded form (supplied)

b: Fully recovered form (after heating)



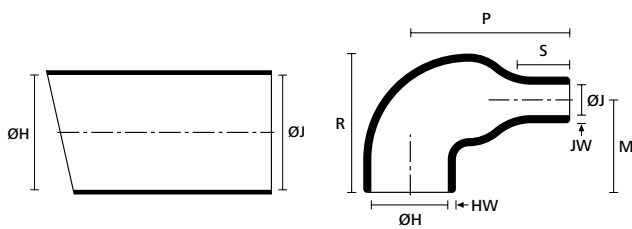
1108-4 Supplied / fully recovered

Type	ØH min. a	ØH max. b	ØJ min. a	ØJ max. b	P ± 10 %	R ± 10 %	HW ± 20 %	JW ± 30 %	V max.	T ± 20 %	M nom.	S nom.	Article-No.
1108-4-G	16.5	7.9	16.5	3.8	17.3	20.1	1	1.6	3.3	1	15.2	5.1	411-08480

All dimensions in mm. Subject to technical changes.

#### Helashrink 1100 Series, without Rib

- Strain relief for connector cable
- Easy re-entry for repair when combined with hot melt adhesive



a: Expanded form (supplied)

b: Fully recovered form (after heating)



1108-1 Supplied / fully recovered

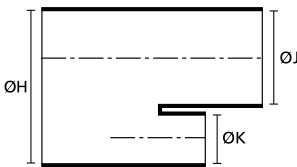
Type	ØH min. a	ØH max. b	ØJ min. a	ØJ max. b	P ± 10 %	R ± 10 %	HW ± 20 %	JW ± 30 %	M nom.	S nom.	Article-No.
1108-1-G	16.5	7.9	16.5	2.5	18.3	20.1	1	1.6	15.2	5.1	411-08180

All dimensions in mm. Subject to technical changes.

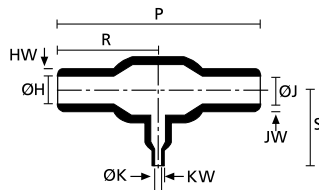
### T-Shapes, VG Style/MIL Style

#### Helashrink 1200 Series

- Strain relief, sealing and mechanical protection on cable harnesses



a: Expanded form (supplied)



b: Fully recovered form (after heating)



1202-1-G Recovered onto a cable harness

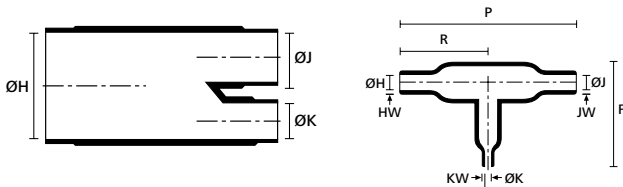
Type	ØH/J min. a	ØH/J max. b	ØK min. a	ØK max. b	P ± 10 %	R ± 10 %	HW ± 20 %	JW ± 30 %	KW ± 20 %	S ± 10 %	Designation as per VG-Norm	Article-No.
1206-1-G	6.6	3	6.6	3	29.7	14.7	1	1	1	14.7	VG 95343 T08 A 009 A	412-06180
1203-1-G	13	6	6.5	3	52	26	1.5	1.5	1	19.3	VG 95343 T08 A 001 A	412-03180
1202-1-G	13.2	6.1	13.2	6.1	58.7	29.2	1.5	1.5	1.5	29.2	VG 95343 T08 A 010 A	412-02180
1205-1-G	17.7	8.9	7.6	3.8	50.8	25.4	1.5	1.5	1	25.4	-	412-05180
1201-1-G	17.7	8.9	10.1	5	47.5	23.6	1.5	1.5	1	23.6	VG 95343 T08 A 007 A	412-01180
1207-1-G	26.9	12.4	26.9	12.4	120.1	55.9	2.5	2.5	2.5	59.9	VG 95343 T08 A 011 A	412-07180
1209-1-G	27	12.4	13.2	6	108	54	2.5	2.5	1.5	38.6	VG 95343 T08 A 002 A	412-09180

All dimensions in mm. Subject to technical changes.

### T-Shapes, VG Style

#### Helashrink 1200 Series, Offset

- For strain relief, sealing and mechanical protection
- Use adhesive for cable transition on harness, if environmental sealing is required



a: Expanded form (supplied)

b: Fully recovered form (after heating)



1204-1 Supplied / fully recovered

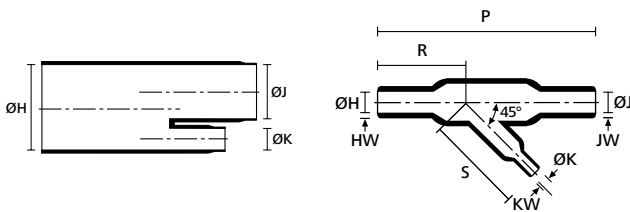
Type	ØH min. a	ØH max. b	ØJ min. a	ØJ max. b	ØK min. a	ØK max. b	P ± 10 %	R ± 10 %	HW ± 20 %	JW ± 20 %	KW ± 20 %	F ± 15 %	Designation as per VG-Norm	Article-No.
1204-1-G	13	7.5	6.5	4	6.5	4	56	33	1.5	1	1	27	VG 95343 T08 A 016 A	412-04180
1216-1-G	33	13	16.5	6.5	16.5	6.5	97	54	2.5	1.5	1.5	-	VG 95343 T08 A 017 A	412-16180

All dimensions in mm. Subject to technical changes.



#### Helashrink 1300 Series, 30° and 45° Angle

- Strain relief, sealing and mechanical protection on cable harnesses
- Branching part 30° & 45° Y-joint
- Mechanical strain relief for cable harnesses



a: Expanded form (supplied)

b: Fully recovered form (after heating)



1303-1-G Supplied / fully recovered

Type	ØH min. a	ØH max. b	ØJ min. a	ØJ max. b	ØK min. a	ØK max. b	P ± 10 %	R ± 10 %	HW ± 30 %	JW ± 30 %	KW ± 20 %	S ± 10 %	Angle	Designation as per VG-Norm	Article-No.
1306-1-G	13	6	6.5	3	6.5	3	45	23	1.5	1	1.5	21.5	4°	VG 95343 T06 B 010 A	413-06180
1301-1-G	13	7	13	7	7	3.5	50	23	1.5	1.5	1	23	45°	VG 95343 T08 B 001 A	413-01180
1302-1-G	27	13	27	13	7	3.5	93	41	2.5	2.5	1	36	45°	VG 95343 T08 B 004 A	413-02180
1303-1-G	27	14	27	14	13	7.5	145	70	1.5	1.5	1.5	54	45°	VG 95343 T08 B 002 A	413-03180
1311-1-G	30.4	15	30.4	15	20.3	10	82.6	32	2.5	2.5	1.8	51	30°	VG 95343 T08 B 003 A	413-11180

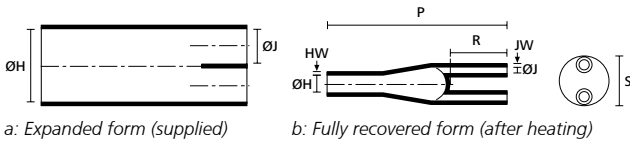
All dimensions in mm. Subject to technical changes.



### 2-Way Outlet Shapes, Breakout Boots

#### Helashrink 200 Series, In-line, Low Voltage

- Easy, time-saving insulation of cable branch point where it splits into single wires
- Adhesive is applied to relieve mechanical tension in cable harnesses



a: Expanded form (supplied)

b: Fully recovered form (after heating)



223-2 Supplied / fully recovered

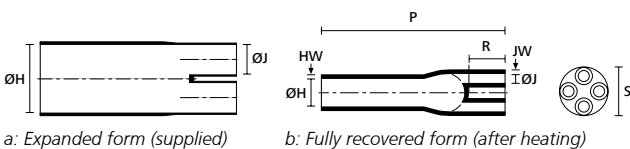
Type	ØH min. a	ØH max. b	ØJ min. a	ØJ max. b	P ± 10 %	R ± 10 %	HW ± 20 %	JW ± 20 %	S nom.	Article-No.
216-3-B8W	21	9.4	9	2.8	76.5	20	1.6	1.6	14	402-16039
223-2-B8W	33	9.4	17.5	4.1	94	30	1.5	1.2	20	402-23058
218-2-B8W	49	22.9	20	7.6	119	34	3.2	3.2	30	402-18051

All dimensions in mm. Subject to technical changes.

### 4-Way Outlet Shapes, Breakout Boots

#### Helashrink 400 Series, In-line, Low Voltage

- Easy, time-saving insulation of cable branch point where it splits into single wires
- Made of tough, cross-linked, Polyolefin
- Adhesive is applied to relieve mechanical tension in cable harnesses



a: Expanded form (supplied)

b: Fully recovered form (after heating)



400 Series supplied / fully recovered

Type	ØH min. a	ØH max. b	ØJ min. a	ØJ max. b	P ± 10 %	R ± 10 %	HW ± 20 %	JW ± 20 %	S nom.	Article-No.
442-1-B8WM250	28	9	9	1.8	78	17	2.7	2	20	404-42009
408-2-B8W2	35	12	15	3	95	24	2.5	2	22	404-08022
418-4-B8W2	60	22.9	30	6.4	202	38.1	4.1	3.3	38.1	404-18020

All dimensions in mm. Subject to technical changes.

### Two-Component Adhesive for Heatshrink Tubing and Shapes

#### V9500

- Operating temperature -75°C to +150°C
- Curing temperature +135°C
- Curing time 24 hours at +25°C, 2 hours at +85°C
- Colour (Epoxy) Black (BK)
- High performance, two-part epoxy adhesive
- Very resistant to most solvents and fuels, even at elevated temperatures
- High performance bonding
- Meets military requirements for heat shrinkable components for harnesses



Two-component epoxy adhesive V9500



Applicator gun guarantees the clean and precise coating of special fittings

RoHS ✓

Type	Description	Designation as per VG-Norm	Article-No.
<b>V9500 Epoxy Kit</b>	5 x 10g sachets (50g), 5 x mixing pots, 5 x mixing sticks, 5 x emery papers	VG 95343 T15 A 001 A	627-95000
	1 x dual cartridge, 5 x mixing pots, 5 x mixing sticks, 5 x emery papers	VG 95343 T15 A 002 B	627-95001
<b>V9500 Epoxy Cartridge</b>	Two-component adhesive cartridge	VG 95343 T15 A	627-95002
<b>V9500 Applicator Gun</b>	Applicator gun	VG 95343 T15 DA	627-95003
<b>V9500 Applicator Nozzle</b>	Mixing nozzle	VG 95343 T15 MA	627-95004

All dimensions in mm. Subject to technical changes.

#### Recommended Industries



### End Caps

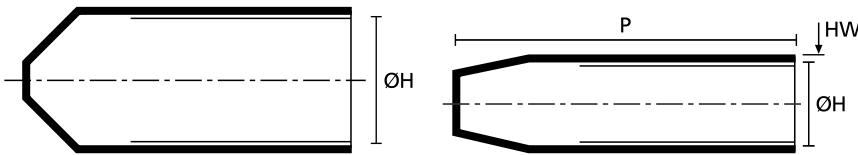
#### Helashrink 1600 Series, Low Voltage

- Operating temperature -55°C to +80°C
- Shrink ratio 3:1
- Min. shrink temperature +135°C
- Dielectric strength 15 kV/mm
- Flammability ASTM D635
- Seal cables during storage or transportation
- Insulating cap for live LV cables (0.6/1kV)
- Adhesive lining for excellent environmental seal
- High shrink ratio to minimise number of sizes needed
- Can be fitted with air valves for pressurised cable applications
- High shrink ratio to minimise number of sizes needed



Appropriate end caps for every cable diameter and cable type

RoHS ✓



a: Expanded form (supplied)

b: Fully recovered form (after heating)

TYPE	Bundle Ø min.	Bundle Ø max.	ØH min. a	ØH max. b	P ± 10 %	Material (p4)	Article-No.
1612-1-B5W2	4	8	12	4	40	PO-X	416-12046
1613-1-B5W2	6.5	16	20	6	55	PO-X	416-13060
1602-1-B5W2	10	20	25	8.5	65	PO-X	416-02008
1614-1-B5W2	16	32	40	15	75	PO-X	416-14047
1615-1-B5W2	26	51	62	23	132	PO-X	416-15035
1617-1-B5W2	32	61	75	32	140	PO-X	416-17033
1616-1-B5W2	48	80	105	45	135	PO-X	416-16053
1609-1-B5W2	65	110	120	60	150	PO-X	416-09000
1610-1-B5W2	90	135	160	82	135	PO-X	416-10000

All dimensions in mm. Subject to technical changes.

#### Recommended Industries



ASTM

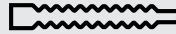
## Heatshrink Moulded Shape Profiles Available on Request

### Low Profile Boots Product

#### Overview

##### Convolute Boots

Helashrink 313C Series,  
with adapter lip



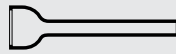
##### Shim Boots

Helashrink 313E Series,  
without adapter lip



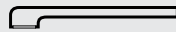
##### Straight Boots

Helashrink 313F Series,  
with adapter lip



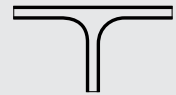
##### Right Angle Boots

Helashrink 333F Series,  
with adapter lip, 90° angle



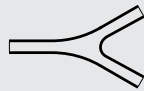
##### Transition Boots

Helashrink 412H Series,  
side breakout



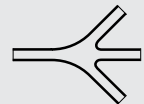
##### Transition Boots

Helashrink 492H Series,  
1 to 2 cables

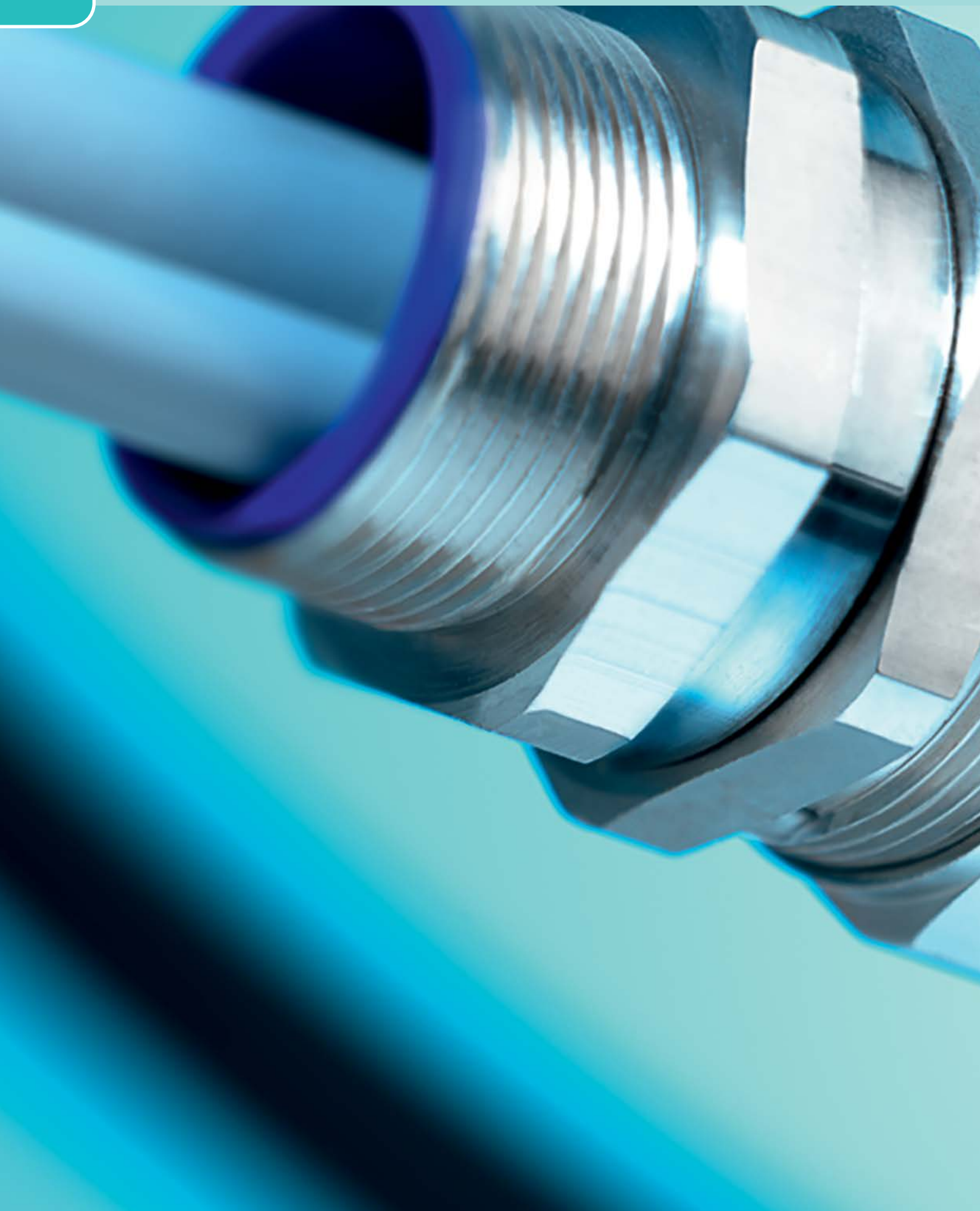


##### Transition Boots

Helashrink 573H Series,  
1 to 3 cables



All dimensions in mm. Subject to technical changes.







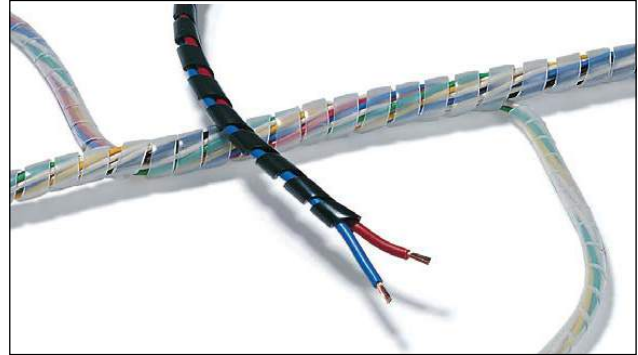
### 3.0 Cable Protection Systems

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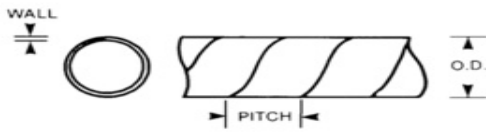
### Spiral Binding

#### NFP-Series, PE (Black and Natural)

- Operating temperature -40°C to +90°C
- Organising and protecting wires, cables and tubes
- Retro-fit
- Wires can branch out at any point, in any direction
- Thin wall available on request
- Wide range of colours and materials available on request
- Materials include flame retardant (RPF), chemical resistant and high temperature



Spiral binding



Type	∅	Wall (WT)	Bundle ∅ max.	Material (p4)	Colour	Length (m)	Article-No.
1NFPBK	1.6	0.8	8	PE	Black (BK) ■	30	161-01001
1NFP	1.6	0.8	8	PE	Natural (NT) ■	30	161-01000
2NFPBK	4.1	1	20	PE	Black (BK) ■	30	161-01003
2NFP	4.1	1	20	PE	Natural (NT) ■	30	161-01002
3NFPBK	9.6	1.2	100	PE	Black (BK) ■	30	161-01005
3NFP	9.6	1.2	100	PE	Natural (NT) ■	30	161-01004
4NFPBK	20	1.2	158	PE	Black (BK) ■	30	911-01828
4NFP	20	1.2	158	PE	Natural (NT) ■	30	911-01827

All dimensions in mm. Subject to technical changes.  
Also available in thin wall on request.

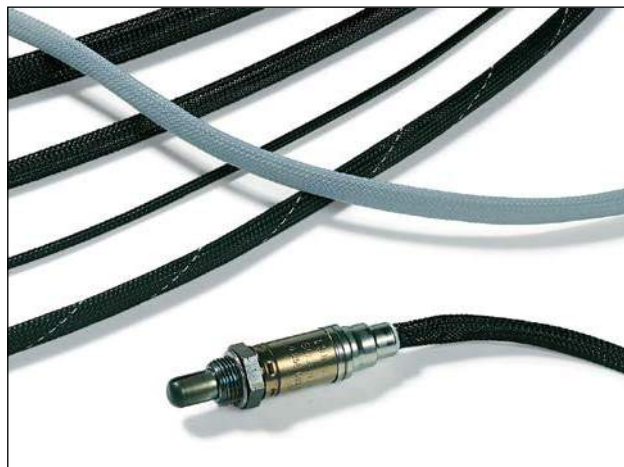
Suitable for the following industries:



### Abrasion-Resistant Braided Sleeving

#### Helagaine, HEGPA66 (Black)

- Operating temperature -60°C to +150°C, intermittent +200°C
- Melting point +255 °C
- Flammability UL 94 V2, FMVSS 302
- Excellent abrasion resistance
- Highly flexible
- Easy to apply over irregular shapes
- Recyclable
- Insensitive to condensation and fungus
- Cutting with a hot-knife no fraying of ends



Various types of Helagaine braided sleeving

HF ✓ RoHS ✓

Type	Bundle Ø min.	Bundle Ø max.	Material (p3)	Colour	Length (m)	Article-No.
MEGA503	2	4	PA66	Black (BK) ■	200	170-40300
MEGA504	3	6	PA66	Black (BK) ■	200	170-40400
MEGA505	3	7	PA66	Black (BK) ■	200	170-40500
MEGA506	4	8	PA66	Black (BK) ■	100	170-40600
MEGA508	5	10	PA66	Black (BK) ■	100	170-40800
MEGA510	7	12	PA66	Black (BK) ■	100	170-41000
MEGA512	8	14	PA66	Black (BK) ■	100	170-41200
MEGA514	10	16	PA66	Black (BK) ■	50	170-41400
MEGA516	12	18	PA66	Black (BK) ■	50	170-41600
MEGA520	15	23	PA66	Black (BK) ■	50	170-42000
MEGA525	18	28	PA66	Black (BK) ■	50	170-42500
MEGA530	25	32	PA66	Black (BK) ■	50	170-43000
MEGA540	30	44	PA66	Black (BK) ■	50	170-44000
MEGA550	40	55	PA66	Black (BK) ■	50	170-45000
MEGA560	50	65	PA66	Black (BK) ■	50	170-46000

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

Suitable for the following industries:



#### Recommended Tool: HSGO



The HSGO hot cutting tool prevents the braided sleeving from fraying

**EN 45545-2**

## Self-Closing Sleeving

### Helagain Twist-in, PET (Black)

- Operating temperature -50°C to +125°C
- Melting Point +255°C
- Flammability: self-extinguishing, FMVSS 302
- Self-closing sleeve made of sturdy polyester
- Provides very good protection against abrasion
- Ideal for retro-fitting
- Quick and easy installation and removal
- Allows for inspection and maintenance
- Bundles and protects pre-terminated cables



Helagain Twist-In enables easy access to cables and wires for assembly, inspection and maintenance

HF ✓ RoHS ✓

Type	Bundle Ø min.	Bundle Ø max.	Material (p4)	Colour	Length (m)	Article-No.
Twist-In 05	4	5	PET	Black (BK) ■	150	170-01000
Twist-In 05	4	5	PET	Black (BK) ■	5	170-01011
Twist-In 08	5	8	PET	Black (BK) ■	100	170-01001
Twist-In 08	5	8	PET	Black (BK) ■	5	170-01012
Twist-In 13	10	13	PET	Black (BK) ■	50	170-01002
Twist-In 13	10	13	PET	Black (BK) ■	5	170-01013
Twist-In 19	16	19	PET	Black (BK) ■	25	170-01004
Twist-In 19	16	19	PET	Black (BK) ■	2	170-01014
Twist-In 25	19	25	PET	Black (BK) ■	25	170-01005
Twist-In 25	19	25	PET	Black (BK) ■	2	170-01015
Twist-In 29	25	29	PET	Black (BK) ■	15	170-01006
Twist-In 29	25	29	PET	Black (BK) ■	2	170-01016
Twist-In 32	29	32	PET	Black (BK) ■	15	170-01007
Twist-In 32	29	32	PET	Black (BK) ■	2	170-01017
Twist-In 38	32	38	PET	Black (BK) ■	15	170-01008
Twist-In 38	32	38	PET	Black (BK) ■	2	170-01018
Twist-In 50	38	50	PET	Black (BK) ■	15	170-01010

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

### Recommended Tools

Type	HSGO
Page	150

Suitable for the following industries:



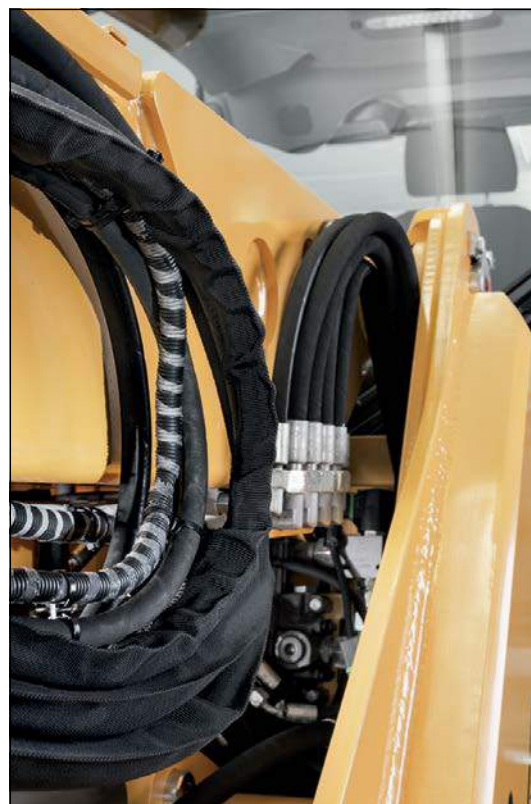
## Burst Protection Sleeving for Hydraulic Hoses

### Helagain, PA6 (Black)

- Operating temperature -60°C to +125°C
- Melting Point +220 +/- 10°C
- Flammability: UL 94 V2, FMVSS 302, Type B
- Exceptional tear-resistance
- Very good protection against abrasion
- Optimal protection of hydraulic hoses
- Reduces risk of liquid-jet injuries
- Fullfills the standards of Earth Moving Machinery EN ISO 3457 and Mechanical Vibration and Shock EN 1299



Helagain (HEGWS) is burst protection sleeve and is used to protect hydraulic hoses and prevent injuries due to leaks emitting high-pressure liquid jets.



Helagain HEGWS: The ideal protective sleeve for hydraulic hoses

Type	Inside Ø (ID)	Wall (WT)	Material (p3)	Colour	Length (m)	Article-No.
HEGWS20	12	1.1	PA6	Black (BK) ■	50	170-01300
HEGWS25	15	1.1	PA6	Black (BK) ■	50	170-01301
HEGWS30	19	1.1	PA6	Black (BK) ■	50	170-01302
HEGWS35	22	1.1	PA6	Black (BK) ■	50	170-01303
HEGWS40	25	1.1	PA6	Black (BK) ■	50	170-01304
HEGWS45	28	1.1	PA6	Black (BK) ■	50	170-01305
HEGWS50	31	1.1	PA6	Black (BK) ■	50	170-01306
HEGWS60	38	1.1	PA6	Black (BK) ■	50	170-01307
HEGWS70	44	1.1	PA6	Black (BK) ■	50	170-01308
HEGWS80	50	1.1	PA6	Black (BK) ■	50	170-01309
HEGWS90	57	1.1	PA6	Black (BK) ■	50	170-01310
HEGWS100	60	1.1	PA6	Black (BK) ■	50	170-01311
HEGWS115	70	1.1	PA6	Black (BK) ■	50	170-01312
HEGWS145	90	1.1	PA6	Black (BK) ■	50	170-01313
HEGWS176	110	1.1	PA6	Black (BK) ■	50	170-01314
HEGWS200	125	1.1	PA6	Black (BK) ■	50	170-01315

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

### Recommended Tools

Type	HSGO
Page	150

Suitable for the following industries:



## Recloseable Protective Sleeving with Hook-and-Loop Seal

### HELAHOOK, PET (Black)

- Operating temperature -50°C to +150°C, intermittent +220°C
- Flammability UL94V2, FVSS 302
- Re-sealable cable protection made of polyester
- Very elastic, fits snugly around the cables
- Hook and loop sealing system can be used for retro-fitting
- High abrasion-resistance



HELAHOOK protective sleeving allows for retrospective fitting and repeated use

HF ✓ RoHS ✓

Type	Bundle Ø min.	Bundle Ø max.	Material (p4)	Colour	Length (m)	Article-No.
Helahook 10	3	15	PET	Black (BK) ■	25	170-05100
Helahook 15	10	20	PET	Black (BK) ■	25	170-05150
Helahook 20	15	30	PET	Black (BK) ■	25	170-05200
Helahook 25	20	40	PET	Black (BK) ■	25	170-05250
Helahook 30	25	50	PET	Black (BK) ■	25	170-05300

All dimensions in mm. Subject to technical changes.  
Cuts in any lengths are available on request.

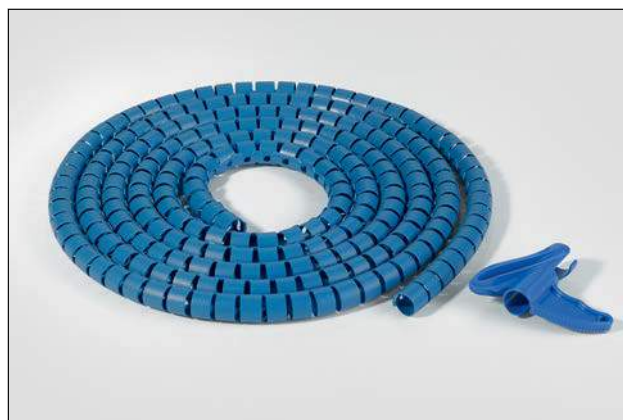
Suitable for the following industries:



## Metal-Content Cable Cover

### Helawrap HWPPMC (Blue)

- Operating temperature -60°C to +100°C, intermittent +140°C
- Flammability UL 94 HB
- High metal-content for reliable detection with standard detection equipment
- Quick and effortless to apply
- Stainless steel preserves resistance to corrosion
- Ideal solution for bundling and protecting cables and hoses
- Highly flexible
- Very good abrasion protection
- Special profile enables branching off cable at any point
- Can be removed and reused
- Handy applicator tool included



Metal-content cable cover

HF ✓ RoHS ✓

Type	Bundle Ø max.	Material (p4)	Colour	Length (m)	Article-No.
HWPPMC8	9	PP, SS	Blue (BL) ■	25	161-66000
HWPPMC16	16	PP, SS	Blue (BL) ■	25	161-66100
HWPPMC20	21	PP, SS	Blue (BL) ■	25	161-66200
HWPPMC25	27	PP, SS	Blue (BL) ■	25	161-66300
HWPPMC30	32	PP, SS	Blue (BL) ■	25	161-66400

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

## Helawrap Applicator Tool

### HAT (blue)

- Bundles cable rapidly and effortlessly
- Glides smoothly and securely through cover
- Easy insertion of cable



Applicator tools are available for every Helawrap cover size

Type	Quantity	HWPPMC	Colour	Article-No.
HAT8	10 pcs.	HWPPMC8	Blue (BL) ■	161-60001
HAT16	10 pcs.	HWPPMC16	Blue (BL) ■	161-60002
HAT20	10 pcs.	HWPPMC20	Blue (BL) ■	161-60003
HAT25	10 pcs.	HWPPMC25	Blue (BL) ■	161-60004
HAT30	10 pcs.	HWPPMC30	Blue (BL) ■	161-60005

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

Suitable for the following industries:



### Metal-Content Spiral Binding

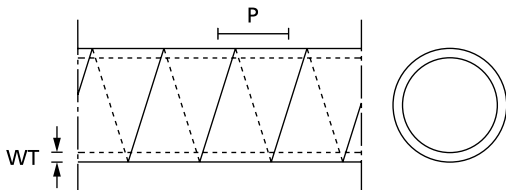
#### SBPEMC (blue)

- Operating temperature -60°C to +80°C, intermittent +120°C
- Flammability UL 94 HB
- High metal-content for reliable detection with standard detection equipment
- Stainless steel preserves resistance to corrosion
- Ideal solution for bundling and protecting cables and hoses
- Highly flexible
- Suitable for retro-fitting
- Branching off cable at any point



Detectable, metal-content spiral binding protects cables on food-processing machines

HF ✓ RoHS ✓



Spiral binding

**i** Can support quality assurance in food production.

Type	Nominal Ø	Wall (WT)	Pitch (P)	Bundle Ø min.	Bundle vØ max.	Material (p4)	Colour	Length (m)	Article-No.
SBPEMC1.5	1.5	0.8	6.0	1.6	8	PE, SS	Blue (BL) ■	30	161-46000
SBPEMC4	4	1.0	7.8	5	20	PE, SS	Blue (BL) ■	30	161-46100
SBPEMC9	9	1.4	12.5	10	100	PE, SS	Blue (BL) ■	30	161-46200
SBPEMC16	16	1.6	16.0	20	150	PE, SS	Blue (BL) ■	30	161-46300

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

Suitable for the following industries:





## PVC Tubing

### Helvin PVC (Black and colour)

- Thin wall
- Minimal space is required
- Available in various colours on request (minimum order required)



Helvin PVC tubing



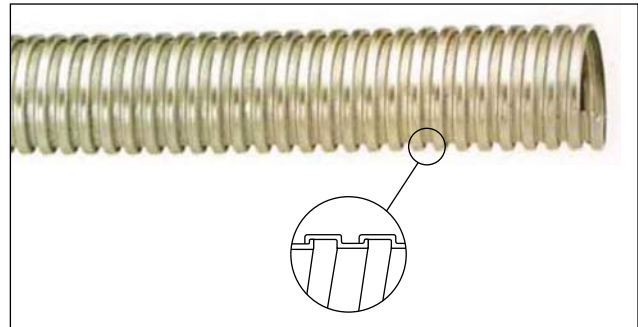
Type	Inside Ø	Wall (WT) nom.	Material (p4)	Colour	Length (m)
PVC1	1	0.3	PVC	BK ■ BN ■ RD ■ OR ■ YL ■ GR ■ BL ■ WT □ PK □ CL □	100
PVC2	2	0.3	PVC	BK ■ BN ■ RD ■ OR ■ YL ■ GR ■ BL ■ WT □ PK □ CL □	100
PVC3	3	0.5	PVC	BK ■ BN ■ RD ■ OR ■ YL ■ GR ■ BL ■ WT □ PK □ CL □	100
PVC4	4	0.5	PVC	BK ■ BN ■ RD ■ OR ■ YL ■ GR ■ BL ■ WT □ PK □ CL □	100
PVC5	5	0.5	PVC	BK ■ BN ■ RD ■ OR ■ YL ■ GR ■ BL ■ WT □ PK □ CL □	100
PVC6	6	0.5	PVC	BK ■ BN ■ RD ■ OR ■ YL ■ GR ■ BL ■ WT □ PK □ CL □	100
PVC8	8	0.7	PVC	BK ■ BN ■ RD ■ OR ■ YL ■ GR ■ BL ■ WT □ PK □ CL □	100
PVC10	10	0.8	PVC	BK ■ BN ■ RD ■ OR ■ YL ■ GR ■ BL ■ WT □ PK □ CL □	100
PVC12	12	0.8	PVC	BK ■ BN ■ RD ■ OR ■ YL ■ GR ■ BL ■ WT □ PK □ CL □	100
PVC13	13	0.8	PVC	BK ■ BN ■ RD ■ OR ■ YL ■ GR ■ BL ■ WT □ PK □ CL □	100
PVC14	14	1.0	PVC	BK ■ BN ■ RD ■ OR ■ YL ■ GR ■ BL ■ WT □ PK □ CL □	100
PVC16	16	1.0	PVC	BK ■ BN ■ RD ■ OR ■ YL ■ GR ■ BL ■ WT □ PK □ CL □	100
PVC18	18	1.0	PVC	BK ■ BN ■ RD ■ OR ■ YL ■ GR ■ BL ■ WT □ PK □ CL □	100
PVC19	19	1.0	PVC	BK ■ BN ■ RD ■ OR ■ YL ■ GR ■ BL ■ WT □ PK □ CL □	100
PVC20	20	1.0	PVC	BK ■ BN ■ RD ■ OR ■ YL ■ GR ■ BL ■ WT □ PK □ CL □	100
PVC22	22	1.1	PVC	BK ■ BN ■ RD ■ OR ■ YL ■ GR ■ BL ■ WT □ PK □ CL □	50
PVC23	23	1.2	PVC	BK ■ BN ■ RD ■ OR ■ YL ■ GR ■ BL ■ WT □ PK □ CL □	50
PVC24	24	1.2	PVC	BK ■ BN ■ RD ■ OR ■ YL ■ GR ■ BL ■ WT □ PK □ CL □	50
PVC25	25	1.2	PVC	BK ■ BN ■ RD ■ OR ■ YL ■ GR ■ BL ■ WT □ PK □ CL □	50
PVC30	30	1.2	PVC	BK ■ BN ■ RD ■ OR ■ YL ■ GR ■ BL ■ WT □ PK □ CL □	50
PVC35	35	1.2	PVC	BK ■ BN ■ RD ■ OR ■ YL ■ GR ■ BL ■ WT □ PK □ CL □	50

All dimensions in mm. Subject to technical changes.

### Flexible Metal Conduit

#### Galvanised Steel

- Square lock style
- Used with a variety of set-screws
- Good mechanical protection to wiring



Type	Size	IØ Min	IØ Max	OØ Min (over jacket)	OØ Max (over jacket)	Min bend Radius	Length (m)	Connector 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	26.6	30.4	31	55	30	
ST32	25	34.7	35.4	39.6	40.3	62	30	

"\$" = Size in mm, \* Any combination can be used,  
All dimensions are in mm. Subject to technical changes.



FKCSM

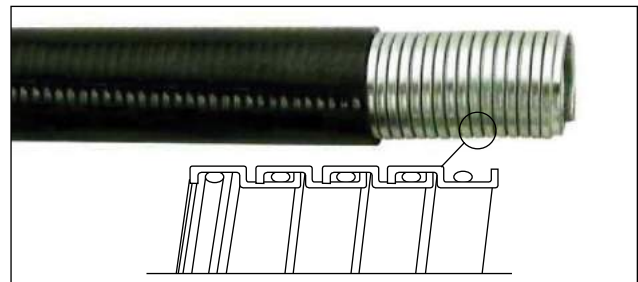


FKCFM

### Liquid Tight Flexible Steel Conduit

#### Galvanised Steel

- Galvanised steel core, corrosion resistant
- Liquid tight PVC jacket
- Flexible
- Flame retardant
- Impact resistant
- Used with a variety of set-screws
- Good mechanical protection to wiring
- Operating temperature -10°C to +70°C



Type	Size	IØ Min	IØ Max	OØ Min (over jacket)	OØ Max (over jacket)	Min bend Radius	Length (m)	Connector Depending on application*
KT20\$	20	15.8	16.3	20.8	21.3	80	30	KCM"\$" - Flex FKCFM"\$" - Fixed FKCSM"\$" - Swivel
KT25\$	25	20.7	21.2	26.2	26.7	100	30	
KT32\$	25	26.2	26.8	32.7	33.4	150	30	

"\$" = Size in mm, Colours : Black, grey, orange.  
\* Any combination can be used,  
All dimensions are in mm. Subject to technical changes.



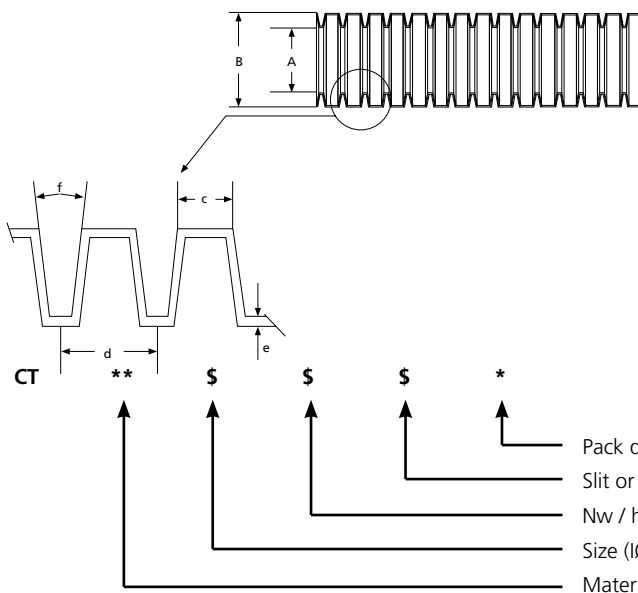
## Convuluted Tubing

### High Impact, PVC (Black)

- Manufactured from Polypropylene without heavy metals (lead)
- Operating temperature -40°C to 150°C
- Flame retardant and heat resistant
- Flexible
- Test certificates and car manufacturer specifications are available on request
- Meets stringent sheathing requirements for automotive wiring harnesses
- Available in slit or un-slit
- Standard colour black, but is available on request in grey, white and orange



HF ✓ RoHS ✓



MATERIAL KEY: Polypropylene (P), Polyamide (A), PVC (V).

### Ordering Information

Type	Nominal Size		Dimensions					Angle
	IØ	OØ	Tolerance - A	B	C	D	E	F
<b>\$=S for slit</b>			±0.4	±0.3	±0.1	±0.15	±0.1	±5°
<b>CTP7NW\$</b>	7	10	6.9	9.6	1.8	2.6	0.15	11°
<b>CTP10NW\$</b>	10	13	10.1	12.7	1.8	2.7	0.2	20°
<b>CTP13NW\$</b>	13	16	12.9	15.8	1.8	2.7	0.2	11°
<b>CTP17NW\$</b>	17	21	16.8	21	2.2	3.2	0.2	11°
<b>CTP22NW\$</b>	22	26	21.8	25.5	2.2	3.1	0.2	11°
<b>CTP5HW\$</b>	5	75	5	7.1	1.2	2.2	0.15	30°
<b>CTP9HW\$</b>	9	13	8.5	12.9	2.1	3.14	0.2	18°
<b>CTP11HW\$</b>	11	16	11.1	15.7	2.1	3.14	0.2	18°
<b>CTP15HW\$</b>	15	21	15	21.2	2.7	3.9	0.2	12°
<b>CTP19HW\$</b>	19	26	19.1	25.7	2.9	4.3	0.25	12°

All dimensions are in mm. Subject to technical changes.

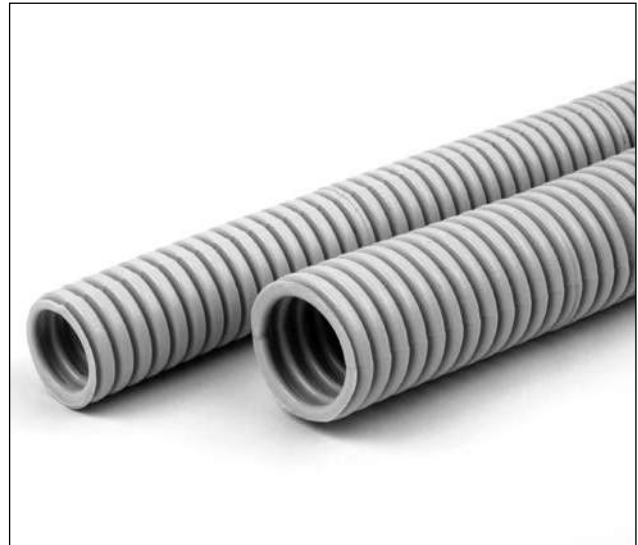
Suitable for the following industries:



### Convolute Tubing

#### Medium Duty (High Impact), PVC (Grey)

- Operating temperature -5°C to 60°C
- Compression force 740N
- High impact, flexible, UV stable
- Durable, crush resistant
- Meets requirements of SABS IEC 60614-1:1994 and IEC 60614-2-3:1990 – Pliable conduits for electrical installations
- Authorisations Committee approval number 0211064
- Construction industry requirements for conduits in concrete slabs, columns, beams and decks



RoHS ✓

Type	Nominal Size		Material (p4)	Colour	Length (m)	Article-No.
	IØ	OØ				
V20HT3905	15.5	20	PVC	Grey (GY) ■	50	911-01831
V25HT3905	20.5	25	PVC	Grey (GY) ■	50	911-01841

All dimensions in mm. Subject to technical changes.

#### Light Duty (Medium Impact), PVC (White)

- Operating temperature -5°C to 60°C
- Compression force 320N
- Medium impact, flexible, UV stable
- Durable
- Meets requirements of SABS IEC 60614-1:1994 - Pliable conduits for electrical installations
- Tubing dimensions are compatible with standard range of commercially available PVC conduit fittings



RoHS ✓

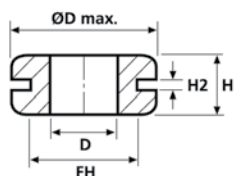
Type	Nominal Size		Material (p4)	Colour	Length (m)	Article-No.
	IØ	OØ				
V20HT2605	16.0	20	PVC	White (WT) □	50	911-01832
V25HT2605	21.0	25	PVC	White (WT) □	50	911-01839

All dimensions in mm. Subject to technical changes.

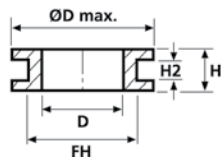
## Edge Protection Grommets

### PVC (Black)

- Operating temperature -30°C to +60°C
- Protects cables from sharp edges
- Provides additional strain relief
- Flexible and easy to apply
- High resistance to chemicals and environmental influences
- Shore hardness A 70±5
- Flammability UL94 HB



HV1101



HV1301 to HV1305



Edge protection grommets

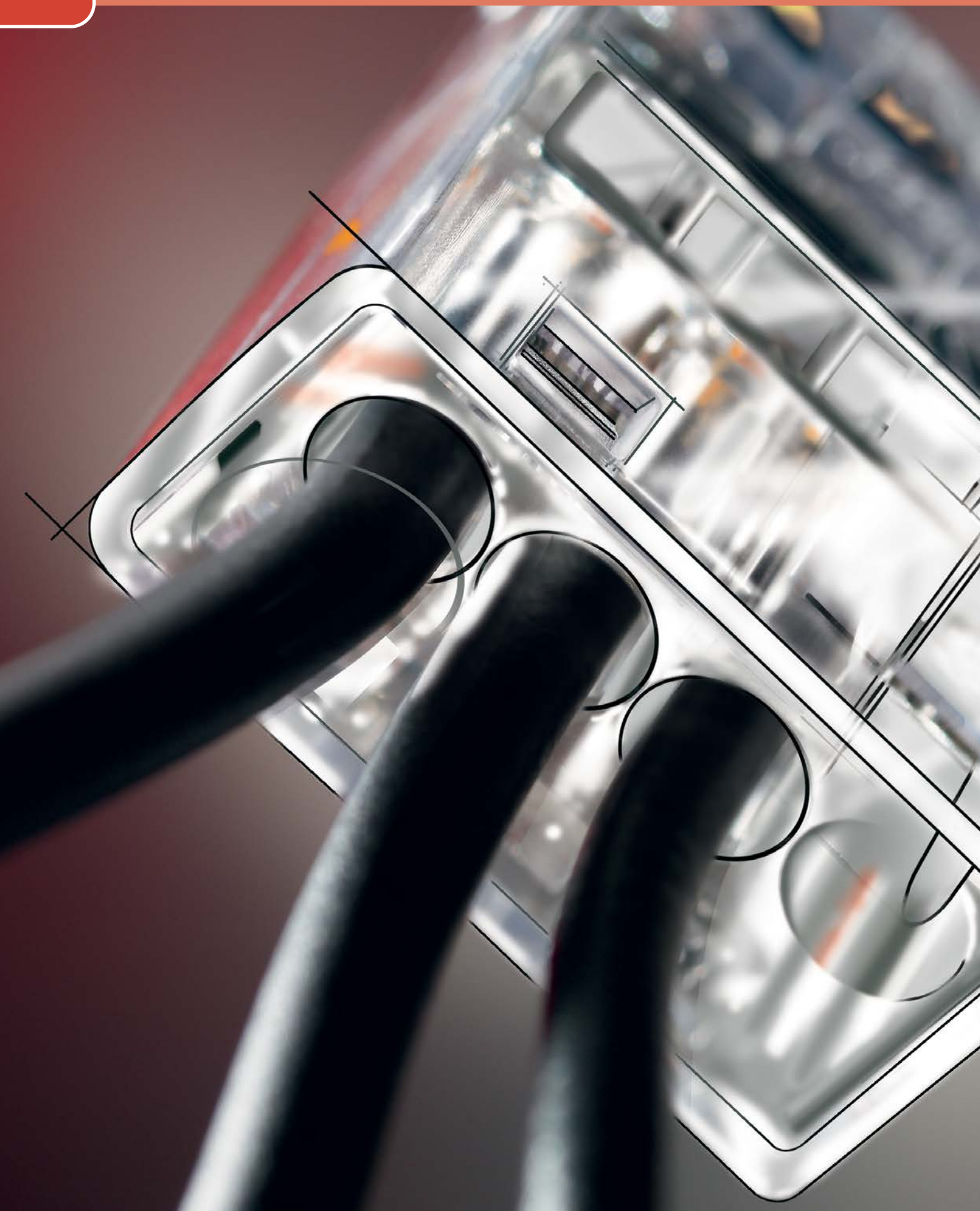
HF ✓ RoHS ✓

Type	ØD max.	Fixing Hole Ø (FH)	D	Height (H)	Height (H2)	Material (p4)	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	5.6	0.8	PVC	Black (BK) ■
HV3195F	9.6	6.4	4	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	6.4	3.2	PVC	Black (BK) ■
HV3109	14.3	11.1	6.4	7.1	1.6	PVC	Black (BK) ■
HV2215F	19	12.7	7.9	8.8	1.6	PVC	Black (BK) ■
HV2215AF	19	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	14.3	11.1	6.4	1.6	PVC	Black (BK) ■
HV3556AF	19	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	1.2	PVC	Black (BK) ■
HV2412	25.4	19	12	7.9	1.6	PVC	Black (BK) ■
HV3222F	28.6	22.2	15.9	7.5	1.2	PVC	Black (BK) ■
HV2166C	38	25.4	22	11.1	3.2	PVC	Black (BK) ■
HV2165	46.1	34.9	30	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	Blank	7.9	2	PVC	Black (BK) ■
HV244F	36.5	25.4	Blank	9.5	2.4	PVC	Black (BK) ■

All dimensions in mm. Subject to technical changes.

Suitable for the following industries:





## Inspired by Minimalism

**4.0 Electrical Installation**

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### Twine Lacing

#### Braided Waxed Nylon Lacing (Black and Natural)

- High temperature up to 150°C
- Oil resistant
- Grips cables as laced and does not loosen if tension is reduced
- Conforms to MIL - T -43435, type 1, finish B



Waxed nylon lacing

Type	Width (W)	Length (L)	Thickness* Nominal	Breaking Load Min (Kg)	Colour	Article-No.
MW062BK	1.5	460	0.3	13.6	Black (BK) ■	174-00001
MW062NT	1.5	460	0.3	13.6	Natural (NT) ■	174-00002
MW090BK	2.3	460	0.3	22.7	Black (BK) ■	174-00003
MW090NT	2.3	460	0.3	22.7	Natural (NT) ■	174-21041

All dimensions in mm. Subject to technical changes  
Measured under 0.45kg tension

### LOH Lacing

#### Waxed Nylon Lacing (Natural)

- Low cost version of MW waxed nylon



LOH lacing

Type	Ø	Length (m)	Colour	Article-No.
LOH1NT	1.7	1000	Natural (NT) ■	174-00231
LOH2NT	2	1000	Natural (NT) ■	174-00235

All dimensions in mm. Subject to technical changes



## HellermannTyton Clips

### Cable Clips, Round and Flat (Black and White)

- Full range of saddles to fit all common cables sizes



Cable clips

Type	Cable Size	Pin Lx	Pin Ø	Style	Colour	Article-No.
HT350WT	3.5	15	1	Round	White (WT) □	911-01085
HT400WT	4	20	1.5	Round	White (WT) □	911-01086
HT500WT	5	20	1.5	Round	White (WT) □	911-01087
HT600BK	6	20	1.5	Round	Black (BK) ■	911-01088
HT600WT	6	20	1.5	Round	White (WT) □	911-01089
HT700BK	7	20	1.5	Round	Black (BK) ■	911-01090
HT700WT	7	20	1.5	Round	White (WT) □	911-01091
HT800BK	8	29	2	Round	Black (BK) ■	911-01092
HT800WT	8	29	2	Round	White (WT) □	911-01093
HT900BK	9	29	2	Round	Black (BK) ■	911-01094
HT900WT	9	29	2	Round	White (WT) □	911-01096
HT1000BK	10	29	2	Round	Black (BK) ■	911-01097
HT1000WT	10	29	2	Round	White (WT) □	911-01098
HT1100WT	11	29	2	Round	White (WT) □	911-01099
HT1200BK	12	29	2	Round	Black (BK) ■	911-01100
HT1200WT	12	29	2	Round	White (WT) □	911-01101
HT2000WT	20	29	2	Round	White (WT) □	911-01102
HT50WT	5	15	1.5	Flat	White (WT) □	911-01081
HT90WT	9	29	2	Flat	White (WT) □	911-01082
HT100WT	10	29	2	Flat	White (WT) □	911-01083
HT120WT	12	29	2	Flat	White (WT) □	911-01084

All dimensions in mm. Subject to technical changes

### Electrical Insulation Tape

#### Hellertape: HT2 and HT3, PVC (Black and Colour)

- Operating temperature -10°C to + 80°C
- Cold and weather resistant
- Flame retardant
- Unaffected by moisture and most chemicals
- Good ageing characteristics
- No flapping or deterioration even under high temperatures



#### Technical Data

Description	HT2	HT3
Adhesion (N/cm)	1.8	1.6
Tensile strength (N/cm)	26	17
Elongation (%)	200	160
Breakdown Voltage (kV) mm <sup>2</sup>	8	5.5

#### HT2

Type	Width (W)	Length (m)	Thickness	Colour	Article-No.
HT2BK	18	20	0.18	Black (BK) ■	911-01103
HT2BL	18	20	0.18	Blue (BL) ■	911-01104
HT2WT	18	20	0.18	White (WT) □	911-01107
HT2GR	18	20	0.18	Green (GR) ■	911-01105
HT2RD	18	20	0.18	Red (RD) ■	911-01106
HT2YL	18	20	0.18	Yellow (YL) ■	911-01108

All dimensions in mm. Subject to technical changes

#### HT3

Type	Width (W)	Length (m)	Thickness	Colour	Article-No.
HT3BK	19	10	0.13	Black (BK) ■	911-01109
HT3BL	19	10	0.13	Blue (BL) ■	911-01110
HT3WT	19	10	0.13	White (WT) □	911-01114
HT3GR	19	10	0.13	Green (GR) ■	911-01111
HT3RD	19	10	0.13	Red (RD) ■	911-01113
HT3YL	19	10	0.13	Yellow (YL) ■	911-01115

All dimensions in mm. Subject to technical changes

#### Recommended Industries for HT3:



### Premium Vinyl Electrical Tape

#### HelaTape Flex 1000+, PVC (Black and Colour)

- Operating temperature -18°C to + 105°C
- Adhesion to backing (N/10mm) - 2.7
- Adhesion to steel (N/10mm) - 3.0
- Tensile strength (N/mm<sup>2</sup>) - 35
- Elongation - 300%
- Dielectric Strength ( kV/mm) - 45
- All-weather, highly flexible, professional grade, self-adhesive vinyl electrical tape
- Pressure sensitive high quality rubber based adhesive
- Excellent resistance to abrasion, moisture, chemicals, corrosion and UV exposure
- Protective jacketing for low, medium and high voltage splices and repairs up to 1kV
- Flame retardant (UL 510)



Type	Width (W)	Length (m)	Thickness (T)	Colour	Article-No.
HHTAPEFLEX1000BK	19	20	0.18	Black (BK) ■	710-10601
HHTAPEFLEX1000BL	19	20	0.18	Blue (BL) ■	710-10603
HHTAPEFLEX1000RD	19	20	0.18	Red (RD) ■	710-10604
HHTAPEFLEX1000WT	19	20	0.18	White (WT) □	710-10607

All dimensions in mm. Subject to technical changes

### Electrical Insulation Tape

#### Nitto (Black and Colour)

- Operating temperature -10°C to + 80°C
- Adhesion (N/cm) - 1.8
- Tensile strength (N/cm) - 26
- Elongation (%) - 200%
- Breakdown Voltage (kV) - 9
- Cold and weather resistant
- Good ageing characteristics
- Unaffected by moisture and most chemicals
- No flagging or deterioration even under high temperatures
- Insulation Class 9



Type	Width (W)	Length (m)	Thickness (T)	Colour
A21BK208	18	20	0.2	Black (BK) ■
A21BL208	18	20	0.2	Blue (BL) ■
A21WT208	18	20	0.2	White (WT) □
A21GR208	18	20	0.2	Green (GR) ■
A21RD208	18	20	0.2	Red (RD) ■
A21YL208	18	20	0.2	Yellow (YL) ■

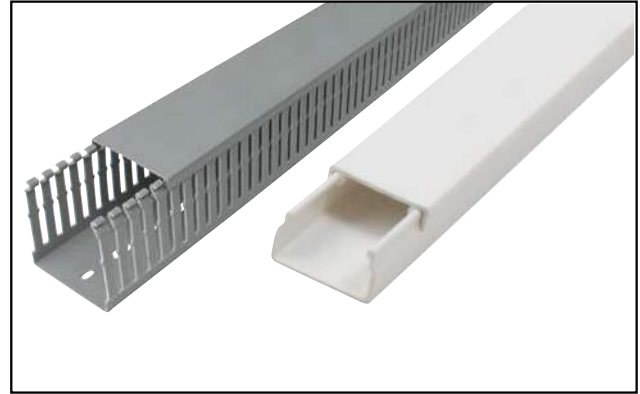
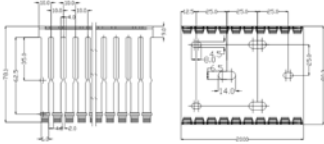
All dimensions in mm. Subject to technical changes

### Cable Securing

#### Trunking: Slotted (Grey) and Solid (White)

- Tough, rigid material with excellent resistance to chemicals and aging properties
- Material lead and cadmium free
- Self-extinguishing
- SABS IEC 61084:1919

#### Trunking: Slotted (Grey)



Finger trunking and Solid trunking

Type	Slot Width	Width (W)	Height (H)	Material	Colour	Length (m)	Bundle
1530N	10	15	30	RAL700 PVC	Grey (GY) ■	2	50
2540N	10	25	40	RAL700 PVC	Grey (GY) ■	2	56
2560N	10	25	60	RAL700 PVC	Grey (GY) ■	2	40
2580N	10	25	80	RAL700 PVC	Grey (GY) ■	2	28
3030N	10	30	30	RAL700 PVC	Grey (GY) ■	2	60
4040N	10	40	40	RAL700 PVC	Grey (GY) ■	2	38
4060N	10	40	60	RAL700 PVC	Grey (GY) ■	2	28
4080N	10	40	80	RAL700 PVC	Grey (GY) ■	2	28
6040N	10	60	40	RAL700 PVC	Grey (GY) ■	2	26
6060N	10	60	60	RAL700 PVC	Grey (GY) ■	2	18
6080N	10	60	80	RAL700 PVC	Grey (GY) ■	2	20
8040N	10	80	40	RAL700 PVC	Grey (GY) ■	2	28
8060N	10	80	60	RAL700 PVC	Grey (GY) ■	2	20
8080N	10	80	80	RAL700 PVC	Grey (GY) ■	2	16
10060N	10	100	60	RAL700 PVC	Grey (GY) ■	2	16
10080N	10	100	80	RAL700 PVC	Grey (GY) ■	2	12
12080N	10	120	80	RAL700 PVC	Grey (GY) ■	2	12

All dimensions in mm. Subject to technical changes

#### Trunking: Solid (White)

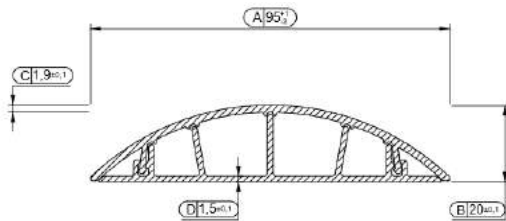
- Snap on lids included
- Available with adhesive backing

Type	Thickness (T)	Width (W)	Height (H)	Material	Colour	Length (m)	Bundle
1616S	1.0	16	16	PVC	White (WT) □	3	20
1616S29	1.0	16	16	PVC	White (WT) □	3	20
2516S	1.0	25	16	PVC	White (WT) □	3	20
2525S	1.0	25	25	PVC	White (WT) □	3	20
4016S	0.9	40	16	PVC	White (WT) □	3	10
4025S	1.0	40	25	PVC	White (WT) □	3	10
4040S	1.02	40	40	PVC	White (WT) □	3	10
7575S*	2.2	75	75	PVC	White (WT) □	3	4
7575SWT*	2.2	75	75	PVC	White (WT) □	3	4
10040S	2.0	100	40	PVC	White (WT) □	3	4
10050S*	2.5	100	50	PVC	White (WT) □	3	2
100100S*	2.5	100	100	PVC	White (WT) □	3	2

All dimensions in mm. Subject to technical changes. \* Minimum Order Quantity (MOQ) maybe required

### Trunking: Floor (White)

- Snap on lid included
- Available with adhesive backing
- RCC No. 0608092
- Tough, rigid material with excellent resistance to chemicals and aging properties
- Material lead and cadmium free
- Self-extinguishing
- SABS IEC 61084:1919

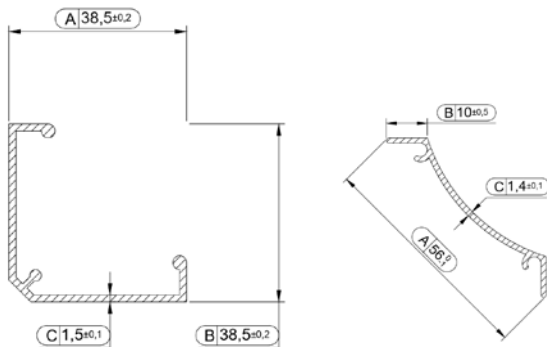


Solid floor trunking

Type	Thickness (T)	Width (W)	Material	Colour	Length (m)	Bundle
FT48GY	2	48	PVC	White (WT) <input type="checkbox"/>	2	10
FT70GY	2	70	PVC	White (WT) <input type="checkbox"/>	2	10

### Trunking: Triangle Corner

- Snap on lid included
- Available with adhesive backing
- RCC No. 0608092
- Tough, rigid material with excellent resistance to chemicals and aging properties
- Material lead and cadmium free
- Self-extinguishing
- SABS IEC 61084:1919



Soild corner trunking

Type	Thickness (T)	Width (W)	Height (H)	Length (m)	Bundle
4040CNR	2	40	40	3	4

## Cable Gland Selection: Wire Size and Number of Cores

## PVC and PVSC SWA Cables (SABS 1507 600-1000V)

Wire Size mm <sup>2</sup>	Recommended Gland Size For Cable Size/Number of Cores																	
	Number of Cores																	
	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	0/1	1	1	1/2	2	2	2	3	3	3	3	4	4	4	4	4	4/5	5
6	1	1	1/2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-
10	1/2	2	2															
16	2	2	3															
25	2/3	2/3	3															
35	2/3	3	3/4															
50	3	3/4	4															
70	3/4	4	4/5															
95	4	4/5	5															
120	4	5	5															
150	4/5	5	5/6															
185	5	5/6	6															
240	6	6	6/7															
300	6	6	7															
**	8	-	-															

All dimensions in mm. Subject to technical changes.

\*\* Check the bedding diameter of the cable

## Cable Gland Selection Guide

Gland Size	Entry	Standard SWA Cable Glands		A2 Compression Glands	
		Bedding Ø (min.)	Cable Ø (max.)	Cable Ø (min.)	Cable Ø (max.)
No 00	20			3	8
No 0	20	12.5	14.8	9	12
No 1	20	15.7	18.7	12	15
No 2	25	20.6	24.4	16	19
No 3	32	26.5	30	21	27
No 4	40	35	39.5	27	36
No 5	50	44	49	37	45
No 6	63	56	62.2	45	57
No 7	75	68	74	57	69

Subject to technical changes.

## Rotary Cone Glands

### BWR Range

- All types of SWA cable
- Clamping of armour wire for earth continuity and mechanical retention of cable
- Used indoor and outdoor
- Easy to install (rotary cone)
- Protects armour wire
- Nickel plated brass glands
- SANS 1213:2017 tested and approved
- Permits available on request

### Accessories

- PVC or rubber shrouds (p172)
- Earth tags (p172)



Type	Size	Entry	Bedding Ø max.	Cable Ø max.	Article-No.
BWR0	No 0	20	12.5	14.8	911-01117
BWR1	No 1	20	15.7	18.7	911-01118
BWR2	No 2	25	20.6	24.4	911-01119
BWR3	No 3	32	26.5	30.0	911-01120
BWR4	No 4	40	35	39.5	911-01121
BWR5	No 5	50	44	49.0	911-01122
BWR6	No 6	63	56	62.2	911-01123
BWR7	No 7	75	68	74.0	911-01124

All dimensions in mm. Subject to technical changes.

## Loose Cone Glands

### BWL Range

- All types of SWA cable
- Clamping of armour wire for earth continuity and mechanical retention of cable
- Used indoor and outdoor
- Easy to install (rotary cone)
- Protects armour wire
- Nickel plated brass glands
- SANS 1213:2017 tested and approved
- Permits available on request

### Accessories

- PVC or rubber shrouds (p172)
- Earth tags (p172)



Type	Size	Entry	Bedding Ø max.	Cable Ø max.	Article-No.
BWL0	No 0	20	12.5	14.08	911-01125
BWL1	No 1	20	15.7	18.7	911-01126
BWL2	No 2	25	20.6	24.4	911-01127
BWL3	No 3	32	26.5	30.0	911-01128
BWL4	No 4	40	35	39.5	911-01129
BWL5	No 5	50	44	49.0	911-01130
BWL6	No 6	63	56	62.2	911-01131
BWL7	No 7	75	68	74.0	911-01132

All dimensions in mm. Subject to technical changes.

### Compression Glands

#### A2 Range

- Nickel-plated brass glands
- All types of 'unarmoured' cable
- Used indoor and outdoor
- Easy to install
- Displacement seal concept ensures effective seal to the outer sheath
- Novel seal design accommodates wide cable range
- SANS 1213:2017 tested and approved
- Permits available on request



Type	Size	Entry	Bedding Ø (max.)	Cable Ø (max.)	Article-No.
A200	No 00	20	3	8	911-01142
A20	No 0	20	9	12	911-01143
A21	No 1	20	12	15	911-01144
A22	No 2	25	15	19	911-01145
A23	No 3	32	21	27	911-01146
A24	No 4	40	27	36	911-01147
A25	No 5	50	37	45	911-01148
A26	No 6	63	45	57	911-01149
A27	No 7	75	57	69	911-01150

All dimensions in mm. Subject to technical changes.

### Metric Glands

#### Metric, PVC, Nylon (Black and White)

- 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 1.5mm



Type	Size	Clamping Range Ø	Thread Length	Material	Colour
BCS1WT*	No 1	10 to 12.5	13	ABS	White (WT) <input type="checkbox"/>
BS0BK	No 0	8.5 to 10.5	13	PVC	Black (BK) <input checked="" type="checkbox"/>
BS0WT	No 0	10 to 12.5	13	PVC	White (WT) <input type="checkbox"/>
BS1BK	No 1	8.5 to 10.5	13	PVC	Black (BK) <input checked="" type="checkbox"/>
BS1WT	No 1	10 to 12.5	13	PVC	White (WT) <input type="checkbox"/>

All dimensions in mm. Subject to technical changes.

\*Nylon glass-filled



## Shrouds

### Shrouds PVC (Black)

- PVC commonly used for indoor applications
- Neoprene Rubber is UV stabilised for outdoor applications

Type	Size	Material	Article-No.
SHP0	No 0	PVC	911-01176
SHP1	No 1	PVC	911-01177
SHP2	No 2	PVC	911-01178
SHP3	No 3	PVC	911-01179
SHP4	No 4	PVC	911-01180
SHP5	No 5	PVC	911-01181
SHP6	No 6	PVC	911-01182
SHP7	No 7	PVC	911-01183



### Shrouds Rubber

Type	Size	Material	Article-No.
SHRL0	No 0	Rubber	911-01190
SHRL1	No 1	Rubber	911-01191
SHRL2	No 2	Rubber	911-01192
SHRL3	No 3	Rubber	911-01193
SHRL4	No 4	Rubber	911-01194
SHRL5	No 5	Rubber	911-01195
SHRL6	No 6	Rubber	911-01196
SHRL7	No 7	Rubber	911-01197

## Slip-on Earth Tag

Type	Slip-size	Ø A	Ø B	Article-No.
ET0	No 0	20	6.8	
ET1	No 1	20	6.8	911-01198
ET2	No 2	25	6.8	911-01199
ET3	No 3	32	6.8	911-01200
ET4	No 4	40	6.8	911-01201
ET5	No 5	50	10.5	911-01202
ET6	No 6	63	10.5	911-01203
ET7	No7	75	10.5	

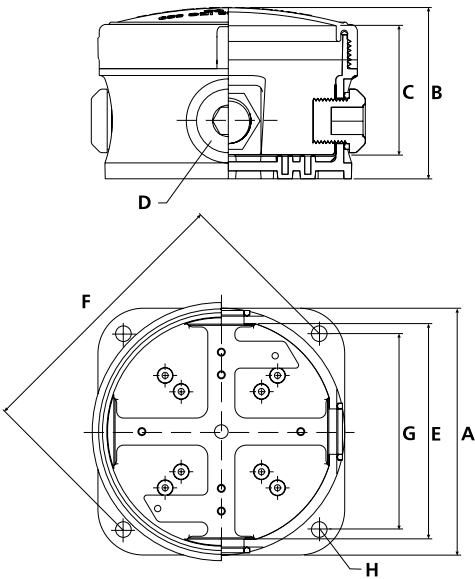
All dimensions in mm. Subject to technical changes.



### Utility Junction Box

#### UV Resistant (White)

- Manufactured from high impact, corrosion and UV-resistant material
- General and industrial installations
- 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



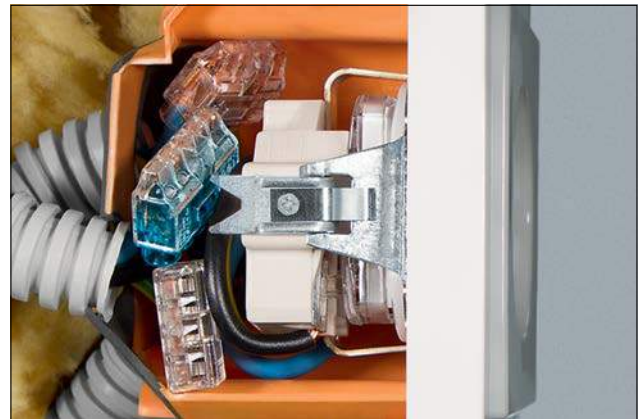
Locally Manufactured

Type	Total Width (A)	Outside Height (B)	Inside Height (C)	Gland Size (D)	Inside Width (E)	Fixing Hole			Article-No.
						(F)	(G)	(H)	
UJB1	109	75	57	M20	94	122	96	6.9	911-01162
UJB2	135	85.5	59.5	M25	124	150	106	7	911-01171

### Solid and Stranded Wire Connectors

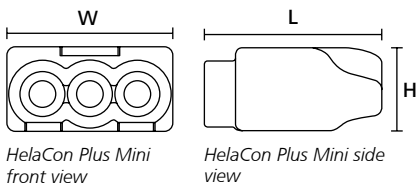
#### HelaCon Plus Mini (Colour)

- 40% smaller – Space saving design
- Low insertion force – Easy to use, saves time on installation
- Easy access to voltage test entry and innovative port shape design
- Correct installation can be visually checked through transparent housing
- Different colour codes for easy identification of size
- Allows different conductor diameters in each entry
- Safe application, installation and maintenance
- Practical Variobox with 350 pcs. of selected HCPM wire connectors available (148-90046)
- Max Current: 24 A
- Max Voltage: 600V
- Wire Range (VDE) in mm<sup>2</sup>: 0.5 to 2.5 mm<sup>2</sup> solid wires / 1.0 to 2.5 mm<sup>2</sup> stranded wires
- Stripping Length: 11.0mm
- Flammability: UL 94 V0
- Operating Temperatures -30°C to +85°C



HelaCon Plus Mini fits perfect in every space limited situation.

HF ✓ RoHS ✓



HelaCon Plus Mini front view

HelaCon Plus Mini side view

Type	Drawing	No of Conductors	Material	Colour	Width (W)	Height (H)	Length (L)	Qty.	Article-No.
HCPM-2		2	PC	Yellow (YL) <span style="color: yellow;">■</span>	10.8	7.7	16.5	100 pcs.	148-90036
HCPM-3		3	PC	Orange (OG) <span style="color: orange;">■</span>	15.1	7.7	16.5	100 pcs.	148-90037
HCPM-4		4	PC	Transparent (CL) <span style="border: 1px solid black; display: inline-block; width: 10px; height: 10px;"></span>	19.4	7.7	16.5	100 pcs.	148-90038
HCPM-5		5	PC	Blue (BU) <span style="color: blue;">■</span>	23.7	7.7	16.5	60 pcs.	148-90039
HCPM-6		6	PC	Violet (VT) <span style="color: purple;">■</span>	28.0	7.7	16.5	50 pcs.	148-90040
HCPM-8		8	PC	Black (BK) <span style="color: black;">■</span>	36.6	7.7	16.5	50 pcs.	148-90041

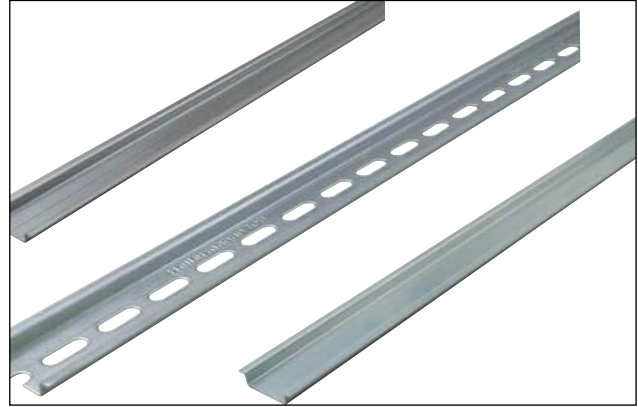
All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content.

Suitable for the following industries:



### Din Rail

- TS32- 46 277, sheet 1
- TS35 - EN 50 022
- TS35SS - EN 10088-2



Type	Drawing	Width (W)	Height (H)	Thickness (T)	Material	Length (m)	Article-No.
TS32		16.5	15	1.5	Steel, zinc plated	2	181-00706
TS35		35	7.5	1	Steel, zinc plated	2	181-00704
TS35S		35	15	1.5	Steel, zinc plated	2m Slotted	181-00701
TS35SSS		35	7.5	1	Stainless Steel	2m	181-00703
TS35AL		35	8	1.5	Aluminium	2m	181-00705
TS35ALS		35	8	1.5	Aluminium	2m Slotted	181-00700

All dimensions in mm. Subject to technical changes.  
T\* in 1.5mm

### Connector strips

- Rated Voltage: 380V AC
- Temperature: 85°C



Type	Wire Size	Rated Current (A)	Material	Colour	Article-No.
CS3MBK	4	3	PE	Black (BK) ■	911-01796
CS5BK	6	5	PE	Black (BK) ■	911-01795
CS15BK	12	15	PE	Black (BK) ■	911-01797
CS15NT	12	15	PE	Natural (NT) ■	911-01798
CS30BK	16	30	PE	Black (BK) ■	911-01799
CS60BK	25	60	PE	Black (BK) ■	911-01800

All dimensions in mm. Subject to technical changes.

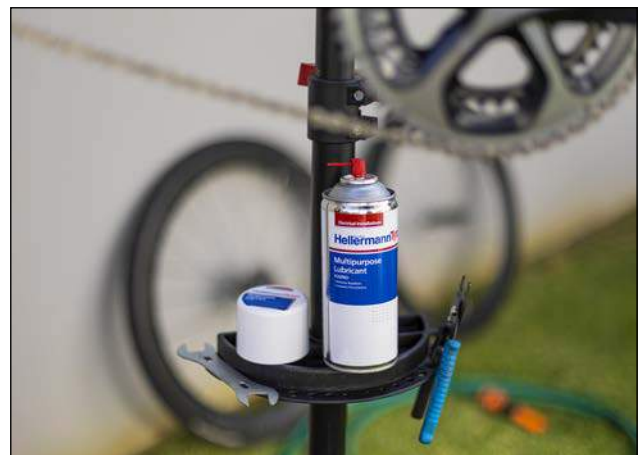
### Multipurpose Lubricant

#### FOSPRO

- High penetrating properties
- Low surface tension and high capillary action allowing for easy dispersion of moisture
- Reduces contact resistance
- High dielectric strength improves insulation resistance
- Provides effective protection against corrosion
- Convenient method of anti-corrosion protection for equipment in storage or transit and requires no degreasing before usage
- Suitable for equipment operating in damp, humid and salt laden atmospheres and/or where frequent hosing down is necessary

#### Typical Uses

- Heavy duty industrial machinery and equipment (electrical and mechanical)
- General purpose: hinges, locks, bicycles, chains
- Effectively removes rust from surfaces
- Protects circuit boards from moisture
- Penetrating oil used to release rusted bolts or pins

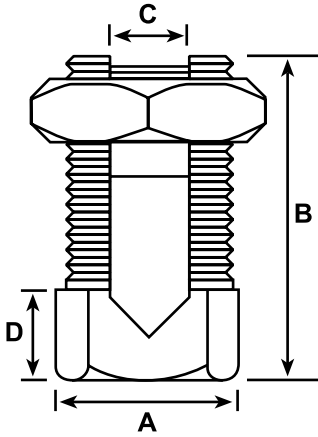


FOSPRO

Type	Description	Article-No.
FOSPRO	De-watering fluid	911-01803

### Line Taps

- Made with high tensile brass and tin plated
- Threads are formed by a rolling process giving the nut extra clamping force
- Pressure pads are from extruded bar



Type	Conductor mm <sup>2</sup>	Number of Conductors				Article-No.
		A	B	C	D	
HTLT10	10	12.6	27.4	5	9.5	911-00779
HTLT16	16	14.5	27.4	5.5	10	911-00782
HTLT25	25	14.5	29	7	10	911-00784
HTLT35	35	20.5	35	8	13	911-00785
HTLT50	50	22	42.5	9.3	17	911-00786
HTLT70	70	26.5	47.3	11	17	911-00787
HTLT95	95	29	53	14	17.5	911-00788
HTLT120	120	34.2	59.2	16.2	18	911-00780
HTLT150	150	34.2	59.2	16	17.5	911-00781
HTLT185	185	32	59.2	17.8	17.5	911-00783

All dimensions in mm. Subject to technical changes.

## Wall Boxes

### Hot Dipped Galvanised Wall Box



HT4X2WB and HT4X4WB

Type	Size	Gland Entry	Machine Screw Thread	Material	Qty	Article-No.
HT4X2WB	4x2	20	4	Galvanised	100	911-00767
HT4X4WB	4x4	20	4	Galvanised	100	911-00771

### Wall Box Extensions (White Powder Coated)



HT4X2EBM and HT4X4EBM

Type	Size	Gland Entry	Machine Screw Thread	Material	Qty	Article-No.
HT4X2EBM	4x2	20	4	Powder Coated	100	911-00768
HT4X4EBM	4x4	20	4	Powder Coated	100	911-00772

### Wall Box (Galvanised)

- Earth stud



HT3X3WB and HT3X6WB

Type	Size	Gland Entry	Material	Qty	Article-No.
HT3X3WB	3x3	20 & 25	Galvanised	100	911-00775
HT3X6WB	3x6	20 & 25	Galvanised	100	911-00777
HT3X3WBE	3x3	20 & 25	Galvanised	100	911-00776
HT3X6WBE	3x6	20 & 25	Galvanised	100	911-00778

All dimensions in mm. Subject to technical changes.

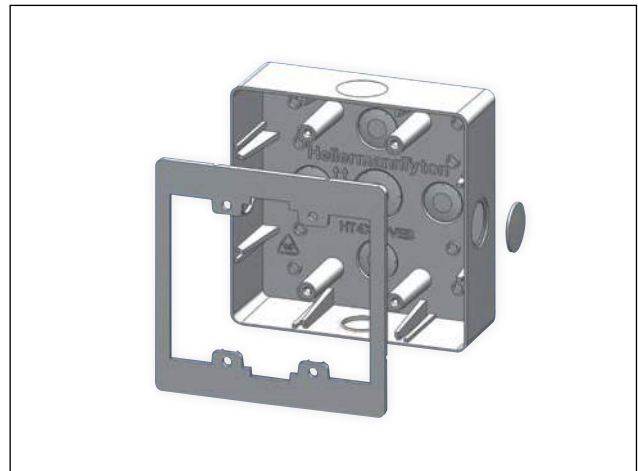
### Wall Boxes

#### Polypropylene (White)

- Operating temperature; -20°C to +85°C
- Designed and manufactured in South Africa to comply with local conditions and specifications
- Unbreakable design
- Easy to remove knockouts
- Five easily removable rear knockouts 1 x 25.0mm and 4 x 20.0mm
- Drill guides for quick mounting
- Extension boxes unique side knock-out
- Flammability UL94 V2
- Certification IEC60335-1:2010 IEC60695-2-11 (Glow wire test 450°C)



Polypropylene wall box range



Innovative design



Locally Manufactured

#### Wall Boxes

Type	Size	Gland Entry	Material	Colour	Qty	Article-No.
HT4X2PVWB	4x2	20	Polypropylene	White (WT) <input type="checkbox"/>	100	911-00769
HT4X4PVWB	4x4	20	Polypropylene	White (WT) <input type="checkbox"/>	100	911-00773

All dimensions in mm. Subject to technical changes.

#### Wall Box Extensions

Type	Size	Gland Entry	Material	Colour	Qty	Article-No.
HT4X2PVEB	4x2	20 & 25	Polypropylene	White (WT) <input type="checkbox"/>	100	911-00770
HT4X4PVEB	4x4	20 & 25	Polypropylene	White (WT) <input type="checkbox"/>	100	911-00774

All dimensions in mm. Subject to technical changes.



## Copper Bonded Earth Rods

### HTCBER1200X12 AND HTCBER1200X13

- Low cost
- No exposed steel (no rust)
- Corrosion resistant
- High tensile strength
- Low carbon steel core
- Suitable for deep driving
- \*HTCBER1200X13: SABS 1063:2020 approval (Authorization certificate available on request)



Type	Length (mm)	Φ	Micron
HTCBER1200X12	1200	12	250
HTCBER1200X13*	1200	13	250

### Optional Accessories

Type	Image	Description
HTCBERCLAMP		Earth Clamp
HTCBERCOUPLING		Earth Coupler

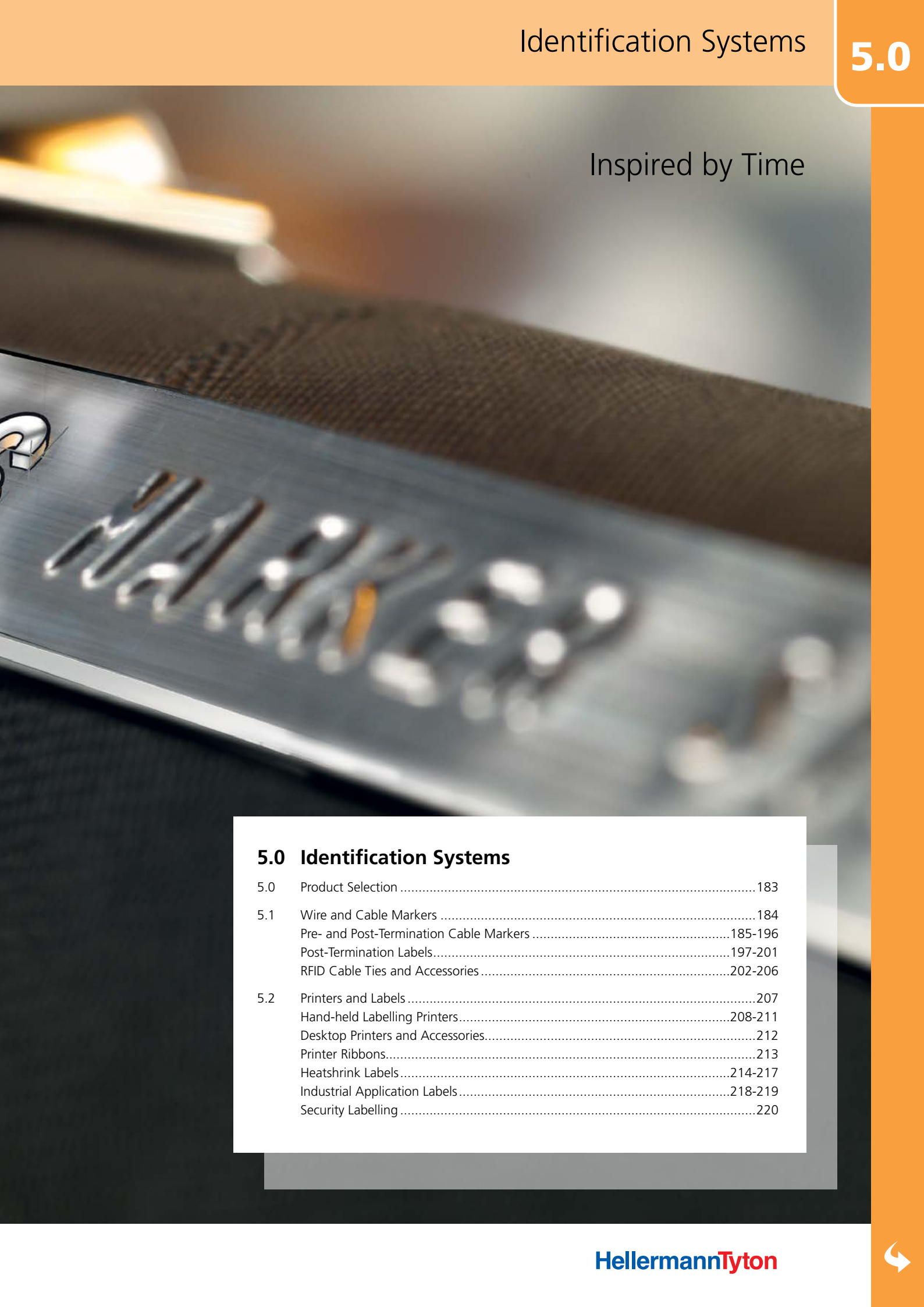


- Strong molecular bond is achieved by applying 99.95% pure copper electrolytically between steel core and copper
- Molecularly bonded copper covers full length of rod including threads
- Thread strength is achieved thru cold rolling process





Inspired by Time









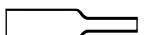








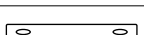

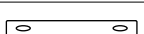








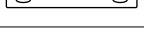




















## 5.0 Identification Systems





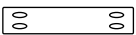
5.0	Product Selection .....	183
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	Pre- and Post-Termination Cable Markers .....	185-196
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	Security Labelling .....	220

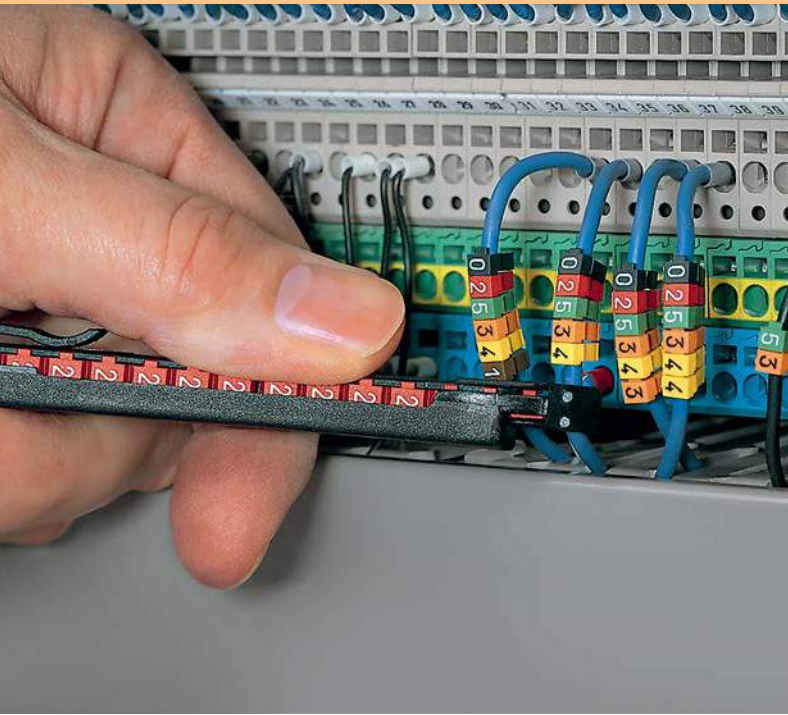


## Production Selection for Printers, Ribbons and Label Types and Materials

							
Type	Label type	Printing method	TrakMark DS (Double sided printing)	TT431	Ribbon		
			TagPrint Pro 3.0				
TULT DS		 	●	●	TTDTHOUT		
TLFX		 	●	●	TTDTHOUT		
TLFX DS		 	●	●	TTDTHOUT		
TIPTAG HF		 		●	TTDTHOUT		
TIPTAG PU		 		●	TTRC+		
TIPTAG MC				●	TTDTHOUT TTRW		
TAGUL		 		●	TTDTHOUT		
TAGPU		 		●	TTRHT		
TAGDR		 		●	TTDTHOUT		
TAGHT		 		●	TTRHT		
Helatag 892				●	TT822OUT		
Helatag 1220		 		●	TT822OUT TT122OUT		
Helatag 1221		 		●	TT822OUT TT122OUT		
Helatag 1203		 		●	TT822OUT		

 Thermal transfer printing  
  Laser printing  
  Laser beam  
  Dot matrix printing  
  Manual writing/marking

 Self-lamination label  
  Plain label  
  Continuous roll  
  Shrinkable marker  
  Identification tag



## 5.1 Wire and Cable Markers

### Pre-Termination Labels

- Pre-printed Cable Markers - HELAGRIP..... 185-186
- Pre-printed Cable Markers - OVALGRIP ..... 187-188

### Post-Termination Cable Markers

- Pre-printed Cable Markers - WIC ..... 189-190

### Pre-Termination Cable Markers

- Helsyn Neoprene Tubing H..... 192
- Hellerine Lubricant..... 192
- Universal Sleeve Fitting Tool ..... 193

### Post-Termination Cable Markers

- Carrier marking system, Laser Printer – Helafix HC and HCR..... 194
- Identification Ties and Plates for Marking Cable Bundles..... 195
- Labels for IT ties..... 196

### Post-Termination Labels

- TIPTAG HF ..... 197
- TIPTAG PU ..... 198
- TAGUL..... 199
- TAGPU..... 200
- TIPTAG MC ..... 201

### RFID Cable Ties and Accessories

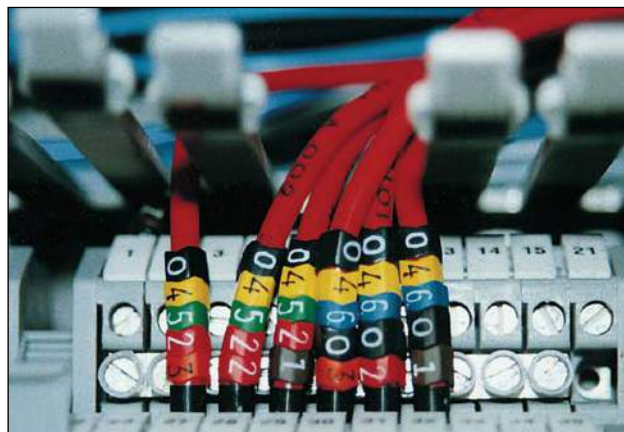
- Cable Ties with Integrated Transponder ..... 202
- Detectable Cable Ties with Integrated Transponder..... 203
- Stainless Steel Cable Ties with Integrated Transponder..... 204
- Accessory with RFID Transponder - HEXTAG..... 205
- Accessory with RFID Transponder - CRADLE ..... 206



### Pre-Printed Cable Markers

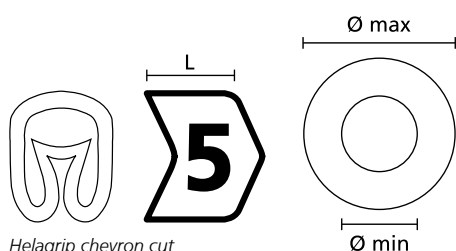
#### HELAGRIP, Slide-on, Chevron-cut

- Operating temperature -65°C to +105°C, intermittent temperature +135°C
- Flammability UL 94 V0 (3mm)
- Easily apply one size marker to wide range of cables
- Markers are applied before termination takes place
- Chevron cut to lock markers together ensuring text remains in place
- Flexible cadmium free material fits securely on wire
- Characters are 0-9, A-Z and standard electrical symbols
- HG25 markers (international colour coding) available on request, MOQ required



Clearly a better way to identify in confined spaces.

HF ✓ RoHS ✓



**i** Locally manufactured

**i** Products have been tested in-house according to UL 224

Type	Cable Ø min.	Cable Ø max.	Length (L)	Material	Colour	Qty
HG13	1	3	3.5	Flexible PVC	Black on Yellow	500
HG25	2	5	3.5	Flexible PVC	Black on Yellow	500

All dimensions in mm. Subject to technical changes.

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

#### Recommended Tools

Type	Image	Size	Article-No.
TJC1-3		Helagrip 1-3	518-00113
TJC2-5		Helagrip 2-5	518-00125

Suitable for the following industries:



## Helagrip, Slide-on, Chevron-cut

HF ✓ RoHS ✓

### HG13

Letter	Type	Numbers & Symbols	Type
A	HG13MAYL	0	HG13M0YL
B	HG13MBYL	1	HG13M1YL
C	HG13MCYL	2	HG13M2YL
D	HG13MDYL	3	HG13M3YL
E	HG13MEYL	4	HG13M4YL
F	HG13MFYL	5	HG13M5YL
G	HG13MGYL	6	HG13M6YL
H	HG13MHYL	7	HG13M7YL
I	HG13MIYL	8	HG13M8YL
J	HG13MJYL	9	HG13M9YL
K	HG13MKYL		
L	HG13MLYL		
M	HG13MMYL		
N	HG13MNYL		
P	HG13MPYL		
Q	HG13MQYL		
R	HG13MRYL		
S	HG13MSYL		
T	HG13MTYL		
U	HG13MUYL		
V	HG13MVYL		
W	HG13MWYL		
X	HG13MXYL		
Y	HG13MYYL		
Z	HG13MZYL		

### HG25

Letter	Type	Numbers & Symbols	Type
A	HG25MAYL	0	HG25M0YL
B	HG25MBYL	1	HG25M1YL
C	HG25MCYL	2	HG25M2YL
D	HG25MDYL	3	HG25M3YL
E	HG25MEYL	4	HG25M4YL
F	HG25MFYL	5	HG25M5YL
G	HG25MGYL	6	HG25M6YL
H	HG25MHYL	7	HG25M7YL
I	HG25MIYL	8	HG25M8YL
J	HG25MJYL	9	HG25M9YL
K	HG25MKYL		
L	HG25MLYL		
M	HG25MMYL		
N	HG25MNYL		
P	HG25MPYL		
Q	HG25MQYL		
R	HG25MRYL		
S	HG25MSYL		
T	HG25MTYL		
U	HG25MUYL		
V	HG25MVYL		
W	HG25MWYL		
X	HG25MXYL		
Y	HG25MYYL		
Z	HG25MZYL		

### HG13 Kits

Type	Description
HG13MYL09	Yellow Marker Kit 0-9
HG13MYLAZ	Yellow Marker Kit A-Z

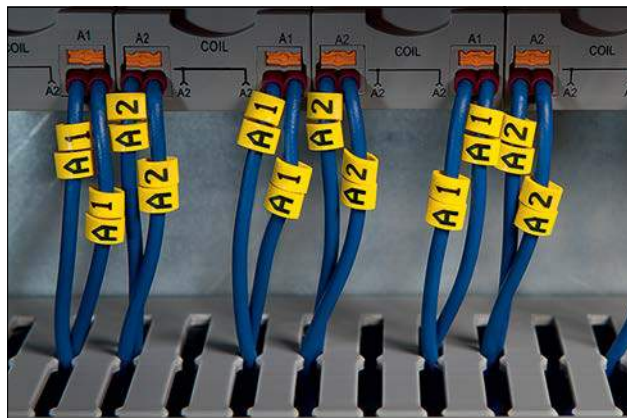
### HG25 Kits

Type	Description
HG25MYL09	Yellow Marker Kit 0-9
HG25MYLAZ	Yellow Marker Kit A-Z

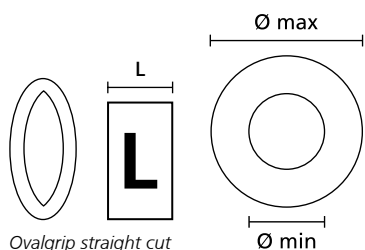
### Pre-Printed Cable Markers

#### OVALGRIP, Slide-on, Straight-cut

- Operating temperature -65°C to +105°C, intermittent temperature +135°C
- Flammability UL94 V0 (3mm)
- Pre-printed markers easily slide onto cables and wires
- Characters 0-9, A-Z and standard electrical symbols
- Oval shaped markers designed to fit AT2 or AT3
- Ideal for maintenance and repair and fixed with cable ties
- Direct application to wire and cable before termination is recommended
- Fits onto new CAT6 cable
- Colour, white with black text available on request, MOQ required



A simple idea for complex marking needs



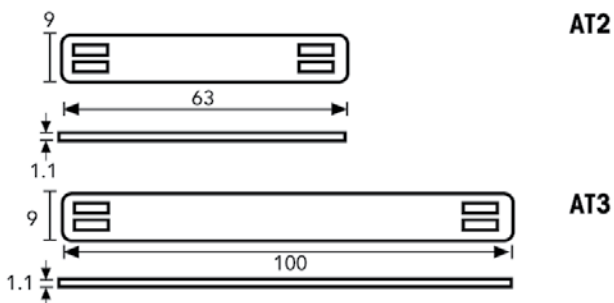
**i** Locally manufactured

Type	Cable Ø min.	Cable Ø max.	Material	Colour	Qty	Arrow tag	Length (L)	Characters
HO85	2.5	5.9	PVC	Black on yellow	100	AT2	63	11

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

#### Arrowtags

AT2 Arrowtags will fit 9 size 85 markers  
AT3 Arrowtags will fit 17 size 85 markers  
Uses cable ties from 2.5 - 5mm (T18 - T50 Series)



Suitable for the following industries:





## Ovalgrip, Slide-on, Straight-cut

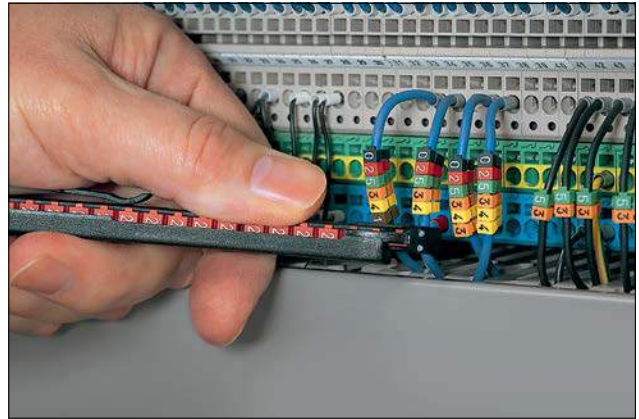
	Type
A	HO854MAYL
B	HO854MBYL
C	HO854MCYL
D	HO854MDYL
E	HO854MEYL
F	HO854MFYL
G	HO854MGYL
H	HO854MHYL
I	HO854MIYL
J	HO854MJYL
K	HO854MKYL
L	HO854MLYL
M	HO854MMYL
N	HO854MNYL
O	HO854MOYL
P	HO854MPYL
Q	HO854MQYL
R	HO854MRYL
S	HO854MSYL
T	HO854MTYL
U	HO854MUYL
V	HO854MVYL
W	HO854MWYL
X	HO854MXYL
Y	HO854MYYL
Z	HO854MZYL

	Type
0	HO854MOYL
1	HO854M1YL
2	HO854M2YL
3	HO854M3YL
4	HO854M4YL
5	HO854M5YL
6	HO854M6YL
7	HO854M7YL
8	HO854M8YL
9	HO854M9YL

### Pre-Printed Cable Markers

#### WIC, Snap-on (Colour)

- Operating temperature -40°C to +85°C, (+105 °C, 500 h)
- Flammability UL 94 V0
- Fast and easy to use pre-printed nylon snap-on marker
- Ideal where termination is completed or for maintenance and repair
- Markers lock together to give perfect text alignment
- Vibration resistant markers, WIC markers lock onto wire and cable tightly
- WIC tool holds 20 WIC markers in all four sizes
- Gripping system locks markers onto wire and resists rotation
- Available in yellow, white and international resistor colour code
- Popular 2 digit markings such as L1, L2, L3, PE are available in yellow or colour code
- Two accessories available to identify cables from 6 mm<sup>2</sup> up to 25 mm<sup>2</sup> (WICA-AC10-25) and up to 95 mm<sup>2</sup> (WICA-ACT-BK)
- Markers for fibre cables should be applied by hand

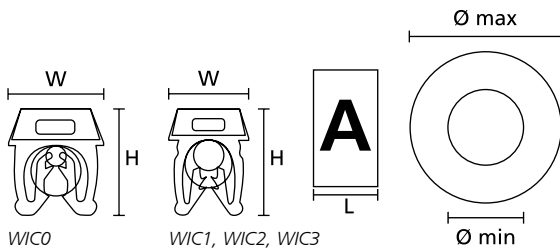


Use the applicator to simply snap the marker onto your cable

HF ✓ RoHS ✓



Customized markers on request



Type	Cable Ø min.	Cable Ø max.	Width (W)	Height (H)	Length (L)	Wire Size Range (mm <sup>2</sup> )	Material (p3)	Qty	Colour
WIC0	0.8	2.2	5	5.5	3	0.15-0.75	PA66	200	Green (GR) <span style="color: green;">■</span>
WIC1	2	2.8	5	6.4	3	0.50-1.50	PA66	200	Red (RD) <span style="color: red;">■</span>
WIC2	2.8	3.8	5.6	7.1	3	1.50-2.50	PA66	200	Blue (BL) <span style="color: blue;">■</span>
WIC3	4.3	5.3	8	9.6	3	4.00-6.00	PA66	200	Yellow (YL) <span style="color: yellow;">■</span>

All dimensions in mm. Subject to technical changes.

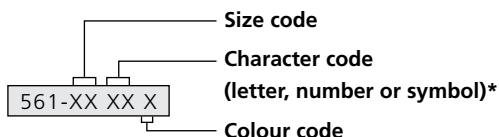
Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available. More colours on request.

Suitable for the following industries:



### WIC, Snap-on (Colour)

#### How to order:



\* For the assortment and the symbols  $\sim$ ,  $\equiv$  please use the code with three digits



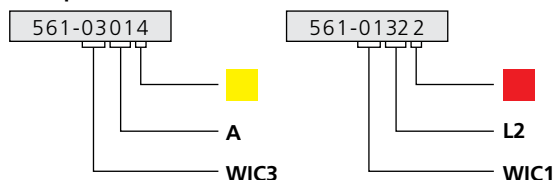
WIC – pre-printed wire and cable markers

RoHS ✓

#### Step 1: Choose your size

Size	WIC0	WIC1	WIC2	WIC3
Code	00	01	02	03

#### Example:



#### Step 2: Choose your letter, symbol, number or assortment

LETTER	A	B	C	D	E	F	G	H	I	J	K
Code	01	02	03	04	05	06	07	08	09	10	11
LETTER	L	M	N	O	P	Q	R	S	T	U	V
Code	12	13	14	15	16	17	18	19	20	21	22
LETTER	W	X	Y	Z							
Code	23	24	25	26							

SYMBOL	L1	L2	L3	PE	+	-	/	↓	.
Code	31	32	33	34	70	71	72	73	74
SYMBOL									
Code	75	76	77	000	001				

NUMBER	0	1	2	3	4	5	6	7	8	9
Code	60	61	62	63	64	65	66	67	68	69

ASSORTMENT	0	1	2	3	4	5	6	7	8	9
Code	100									
ASSORTMENT	A	E	L	N	R	S	T	+	-	
Code	994									
ASSORTMENT	G	H	Y	Z	O	Q	J	K	X	L
Code	003									
ASSORTMENT	L1	L1	L2	L2	L3	L3	N	N	↓	↓
Code	300									
ASSORTMENT	L1	L1	L2	L2	L3	L3	N	N	↓	↓
Code	302									

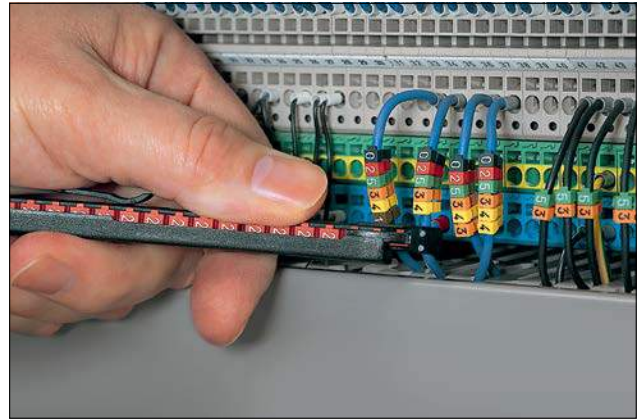
ASSORTMENT	0	1	2	3	4	5	6	7	8	9
Code	101									
ASSORTMENT	B	C	U	V	W	P	D	F	I	M
Code	002									
ASSORTMENT	.	/	---	↓	+	-	~	=	*	
Code	004									
ASSORTMENT	L1	L1	L2	L2	L3	L3	N	N	↓	↓
Code	301									
ASSORTMENT	L1	L1	L2	L2	L3	L3	N	N	↓	↓
Code	303									

#### Step 3: Choose your colour

COLOUR										
Code	0	1	2	3	4	5	6	7	8	9

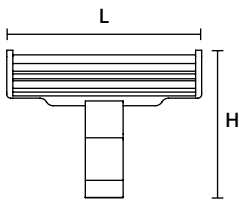
### WIC Tool and Accessories

- Operating temperature -40°C to +85°C

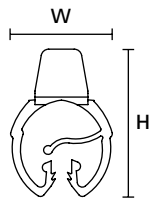


Use the applicator to simply snap the marker onto your cable

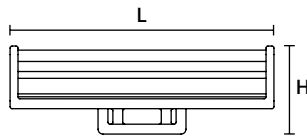
HF ✓ RoHS ✓



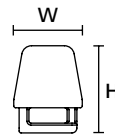
WICA-AC (front view)



WICA-AC (side view)



WICA-ACT (front view)



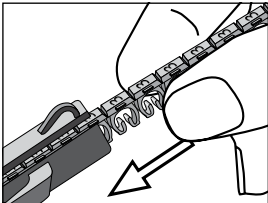
WICA-ACT (side view)

Type	Description	Cable Ø min.	Cable Ø max.	Width (W)	Height (H)	Length (L)	Material	Marker tiles per carrier	Qty	Article-No.
WICA-AC10-25	Snap-on accessory	5.5	9.5	13.5	19.4	25.8	PA66HIRHS	8	100	561-06001
WICA-ACT-BK	WIC adapter for fixing cable ties	3	38	7	8.9	26.7	PA66HIRHS	8	100	561-06000
WIC Tool	Applicator	-	-	-	-	-	PA6GF15	-	5	561-00001

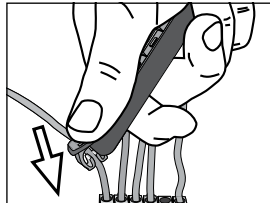
All dimensions in mm. Subject to technical changes.

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

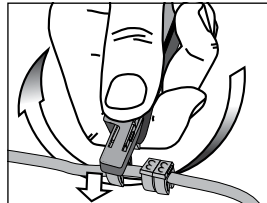
### Application of WIC markers using WIC Tool



Step 1



Step 2



Step 3

## Helsyn Neoprene Rubber Tubing H

### Neoprene (Black, Red and Yellow)

- Operating temperature -65°C to +95°C, intermittent temperature 120°C
- Highly elastic
- Various cable diameters covered with one sleeve sizes
- Original size expanded to 500% on application and 200% in continuous use



H rubber tubing is highly flexible and easy to apply

HF ✓ RoHS ✓

Type	Supplied IØ	Wall (WT)	Material	Colour	Article-No.
H12TBK	1.2	0.7	Neoprene	Black (BK) ■	608-01001
H12TRD	1.2	0.7	Neoprene	Red (RD) ■	608-01008
H15TBK	1.5	0.8	Neoprene	Black (BK) ■	608-01013
H20TBK	2	0.8	Neoprene	Black (BK) ■	608-01028
H20TRD	2	0.8	Neoprene	Red (RD) ■	608-01036
H30TBK	3	0.8	Neoprene	Black (BK) ■	608-01057
H30TRD	3	0.8	Neoprene	Red (RD) ■	608-01065
H30TYL	3	0.8	Neoprene	Yellow (YL) ■	608-01069
H50TBK	5	1	Neoprene	Black (BK) ■	608-01091
H50TRD	5	1	Neoprene	Red (RD) ■	608-01098
H75TBK	7.5	1.3	Neoprene	Black (BK) ■	608-01107
H100TBK	10	1.5	Neoprene	Black (BK) ■	608-01122
H100TYL	10	1.5	Neoprene	Yellow (YL) ■	
H150TBK	15	1.7	Neoprene	Black (BK) ■	608-01136

All dimensions in mm. Subject to technical changes.

Available in the following colours: blue, green/yellow, brown, grey. Minimum Order Quantity (MOQ) required.

Suitable for the following industries:



## Hellerine Lubricant

- Installation of elastomer sleeves
- Evaporates slowly after installation
- Manipulation of elastomer sleeves can still occur
- Sleeve fitting tool required
- Guaranteed to be completely fungistic

Type	Size	Article-No.
HEL200	200ml	625-00100



Hellerine lubricant in 200 ml plastic bottle

### Universal Sleeve Fitting Tool

DKIT, NA, K, S, SS

- Helsyn sleeve fitting tool
- Interchangeable prongs
- Speedy application of markers and sleeves
- DKIT includes tool, various prongs and Hellerine



DKIT includes tool, various prongs and Hellerine

**i** Hellerine lubricant is strongly recommended when fitting synthetic rubber and PVC components

Type	Cable Ø min	Cable Ø max	OØ max.	Marker Length max.	Article-No.
DKIT	1.2	11.5	17	32	621-80005
NA8/10	12	17	25.5	60	621-10810
K Tool	5	10	17	32	621-80007
SS Tool	1.2	2	15	20	621-80008
S Tool	2.5	4	15	20	621-80009

Suitable for the following industries:



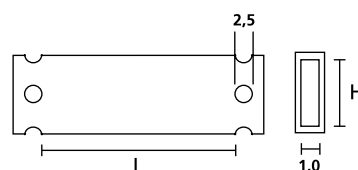
### Carrier Marking System, Laser Printer

#### HELAFIX HC and HCR Carriers

- Operating temperature -60°C to +65°C
- Flammability UL 94 HB
- Resistance to UV light, water and a variety of solvents.
- Versatile transparent carriers used for temporary or permanent marking
- Fixed in place using T18 series cable ties, screws or rivets (carrier HC06, no rivet hole)
- Helafix HC supplied as cut lengths in bags, pre-cut and pre-punched rivet hole (carrier HC06 has no punched hole)
- Helafix HCR supplied in continuous tube format and can be cut to size with HCT tool
- Helafix HFX labels designed to fit into HC and HCR carriers
- Marking of cable looms, cables, pipes, transport systems, valves, sensors, for inventory marking on machines, etc.



Multi-purpose identification potential: Helafix HC and HCR



HF ✓ RoHS ✓

#### HCR

Type	Length (L)	Height (H)	Material	Length (m)	Recommended Labels	Article-No.
HCR06		7	PEUV	25		525-07003
HCR09		10	PEUV	25	HFX9	525-10003
HCR12		13	PEUV	25	HFX12	525-13003
HCR18		19	PEUV	25		525-19003
HCR24		25	PEUV	25		525-25003

#### HC

Type	Length (L)	Height (H)	Material	Qty	Recommended Labels	Article-No.
HC06-17	17.5	7	PEUV	50		525-07173
HC09-17	17.5	10	PEUV	50	HFX9-17P	525-10173
HC12-17	17.5	13	PEUV	50		525-13173
HC06-35	35	7	PEUV	50		525-07353
HC09-35	35	10	PEUV	50	HFX9-35P	525-10353
HC12-35	35	13	PEUV	50	HFX12-35P	525-13353
HC18-35	35	19	PEUV	50		525-19353
HC09-52	52	10	PEUV	50	HFX9-52P	525-10523
HC12-52	52	13	PEUV	50	HFX12-52P	525-13523
HC18-52	52	19	PEUV	50		525-19523
HC24-52	52	25	PEUV	50		525-25523
HC12-70	70	13	PEUV	50		525-13703
HC18-70	70	19	PEUV	50		525-19703
HC24-70	70	25	PEUV	50		525-25703

All dimensions in mm. Subject to technical changes.

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

#### Recommended Tools

Type	Carrier Width	Carrier Size	Ø	Article-No.
HCT1	10	HCR09	2.5	525-00010
HCT2	13	HCR12	2.5	525-00013

Suitable for the following industries:



### Identification ties and plates for marking cable bundles

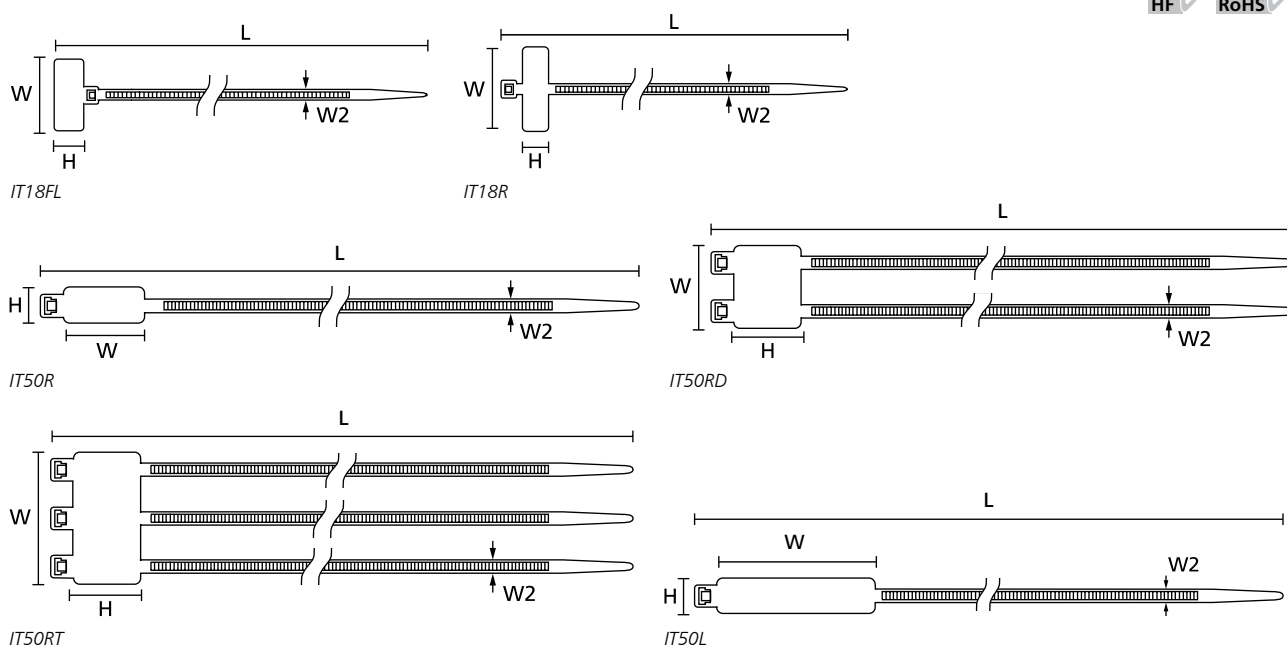
#### IT-Ties (Natural)

- Operating temperature -40°C to +85°C
- Flammability UL 94 V2
- Simple identification and securing of cable bundles in one step
- Printable labels are available for a professional finish
- Manual or temporary marking is possible with marking pen
- Ability to both secure and identify cable bundles at different times



One operation with two user benefits

HF ✓ RoHS ✓



Type	Bundle Ø min.	Bundle Ø max.	Width (W)	Height (H)	Length (L)	Width (W2)	N	Material (p3)	Qty	Colour	Article-No.
IT18FL	1.5	19	20.5	9	110	2.5	80		100	Natural (NT)	111-81919
IT18R	6	22	25	8	100	2.3	80	PA66	100	Natural (NT)	111-81821
IT50R	9.5	44.5	28	12.9	203	4.6	225	PA66	100	Natural (NT)	111-85019
IT50RD	10	44	29	26.3	205	4.7	225	PA66	50	Natural (NT)	111-85219
IT50RT	10	44	46	26.3	205	4.7	225	PA66	50	Natural (NT)	111-85119
IT50L	19	100	56	12.8	390	4.7	225	PA66	100	Natural (NT)	111-85319

All dimensions in mm. Subject to technical changes.

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

#### Recommended Labels

Type	IT18FL	IT18R	IT50R	IT50RD	IT50RT	IT50L
Page	196	196	196	196	196	196
Recommended Label	TAG18-07TD1	TAG23-06TD1	TAG23-10TD1	TAG26-21TD1	TAG43-21TD1	TAG52-10TD1

Suitable for the following industries:

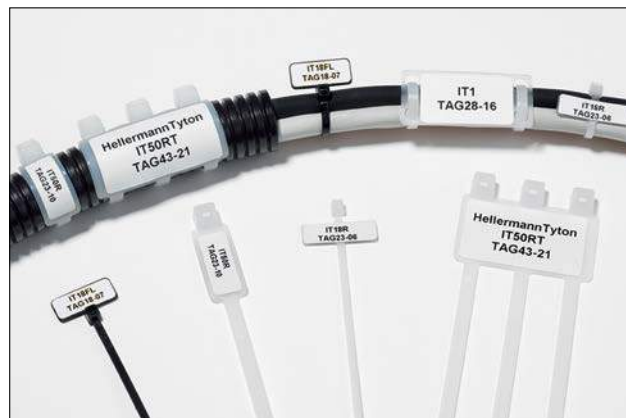




### Labels for IT Ties, IMP Plates and Q-Tags, Thermal Transfer

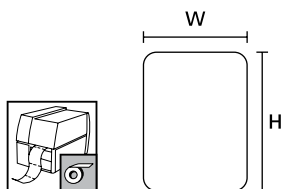
#### HELATAG 892 (White)

- Operating temperature -40°C to +80°C
- Curing temperature from 0°C
- Thickness of foil 83µm
- Good resistance against water, oils and most solvents.
- Suited to the slightly rough surfaces of Q-tags, IT ties and IMP/IT plates
- Adheres to rounded surfaces (acrylic)
- Rounded corners ensure better long term durability of adhesion
- White labels give excellent contrast
- Flexible material sticks
- Use unique numbering, graphics or barcodes the labels give excellent asset identification possibilities
- Professional marking of tubes, pipes, cables and other parts



Identification ties and tags

RoHS ✓



Type	Width (W)	Height (H)	Width of Liner (WL)	For Size	Qty	Colour	Article-No.
TAG18-07TD1-892-WH	18	7	24	IT18FL	5 000	White (WT) <input type="checkbox"/>	596-12253
TAG18-16TD1-892-WH	18	16	24	IMP1.5	2 500	White (WT) <input type="checkbox"/>	596-12254
TAG23-06TD1-892-WH	23	6	30	IT18R	5 000	White (WT) <input type="checkbox"/>	596-12255
TAG23-10TD1-892-WH	23	10	30	IT50R	5 000	White (WT) <input type="checkbox"/>	596-12256
TAG26-21TD2-892-WH	26	21	57	IT50RD	2 500	White (WT) <input type="checkbox"/>	596-12257
TAG28-16TD1-892-WH	28	16	34	IT1, IMP2	2 500	White (WT) <input type="checkbox"/>	596-12258
TAG43-16TD1-892-WH	43	16	50	IMP2.5	2 500	White (WT) <input type="checkbox"/>	596-12259
TAG43-21TD1-892-WH	43	21	50	IT50RT	2 500	White (WT) <input type="checkbox"/>	596-12260
TAG43-41TD1-892-WH	43	41	50	IMP2.5W1.75	1 000	White (WT) <input type="checkbox"/>	596-12261
TAG52-10TD1-892-WH	52	10	58	IT50L	5 000	White (WT) <input type="checkbox"/>	596-12262
TAG63TD1-892-WH	63.5	38.1	70	QT7040R, QT7040S	1 000	White (WT) <input type="checkbox"/>	596-12263
TAG68-16TD1-892-WH	68	16	74	IMP3.5, QT7016R	2 500	White (WT) <input type="checkbox"/>	596-12264
TAG102-64TD1-892-WH	102	64	106	QT10065R	250	White (WT) <input type="checkbox"/>	596-12265

All dimensions in mm. Subject to technical changes.

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

#### Recommended printers

Ribbon	Printer	Page
TT822OUT	TT431	204

Suitable for the following industries:



### Identification Tags for Cable Bundle, Thermal Transfer

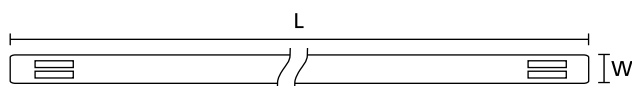
#### TIPTAG HF (Colour)

- Operating temperature -40°C to +90°C
- Flammability Low generation of toxic gases and corrosive acid, low smoke generation
- Identify larger wires and cable bundles
- Ideal for marking larger wire and cable bundles
- Perforated format that includes fastening slots for cable ties
- Suitable for retrofit
- Print from reel with HellermannTyton's premium range of thermal transfer printers and ribbons for optimum print quality and longevity
- EN 45545-2 Classification R22 HL3, R23 HL3



TIPTAG - high performance cable bundle marking

HF ✓ RoHS ✓ LFH ✓



Type	Length (L)	Width (W)	Material	Colour	Qty	Article-No.
TIPTAG11X65BU	65	11	PO	Blue (BL) <span style="color:blue">■</span>	190	556-20066
TIPTAG11X65RD	65	11	PO	Red (RD) <span style="color:red">■</span>	190	556-20062
TIPTAG11X65WH	65	11	PO	White (WT) <span style="border:1px solid black; display:inline-block; width:10px; height:10px;"></span>	190	556-20069
TIPTAG11X65YE	65	11	PO	Yellow (YL) <span style="color:yellow">■</span>	190	556-20064
TIPTAG15X65WH	65	15	PO	White (WT) <span style="border:1px solid black; display:inline-block; width:10px; height:10px;"></span>	190	556-21069
TIPTAG15X65YE	65	15	PO	Yellow (YL) <span style="color:yellow">■</span>	190	556-21064
TIPTAG11X100BU	100	11	PO	Blue (BL) <span style="color:blue">■</span>	120	556-20080
TIPTAG11X100RD	100	11	PO	Red (RD) <span style="color:red">■</span>	120	556-20091
TIPTAG11X100WH	100	11	PO	White (WT) <span style="border:1px solid black; display:inline-block; width:10px; height:10px;"></span>	120	556-20079
TIPTAG11X100YE	100	11	PO	Yellow (YL) <span style="color:yellow">■</span>	120	556-20074
TIPTAG15X100RD	100	15	PO	Red (RD) <span style="color:red">■</span>	120	556-21096
TIPTAG15X100WH	100	15	PO	White (WT) <span style="border:1px solid black; display:inline-block; width:10px; height:10px;"></span>	120	556-21079
TIPTAG15X100YE	100	15	PO	Yellow (YL) <span style="color:yellow">■</span>	120	556-21074

All dimensions in mm. Subject to technical changes.

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

#### Recommended Printers

Ribbon	Printer	Page
TTDTHOUT	TT431	204

Suitable for the following industries:



**EN 45545-2**

### Identification Tags for Cable Bundle, Thermal Transfer

#### TIPTAG PU, UV-stabilised (Yellow and White)

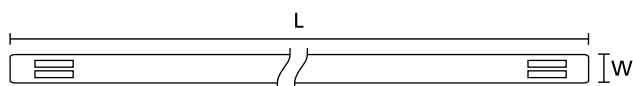
- Operating temperature -65°C to +120°C, intermittent temperature +150°C
- Flammability self-extinguishing, UL 94 V0 (3mm)
- Suitable for retrofit purposes
- Print from reel using TT431 thermal printer
- Durable and robust polyurethane material
- For large cable bundles and wires
- Harsh Environments
- Flame retardant
- Weather resistant
- Abrasion resistant
- Good resistance to chemicals
- Available in white and yellow as standard
- Perforated format with fastening slots for cable ties



TIPTAG PU – printed mark has a tattoo-like permanency.

RoHS ✓

**i** A special durable ribbon developed for Tiptag PU to create a “tattoo” effect to ensure marking cannot be rubbed off and resistant to harsh abrasion.



Type	Length (L)	Width (W)	Material	Colour	Qty	Article-No.
TTAGPU11X65WH	65	11	PUR DS	White (WT) <input type="checkbox"/>	190	556-25012
TTAGPU11X65YE	65	11	PUR DS	Yellow (YL) <input checked="" type="checkbox"/>	190	556-25019
TTAGPU15X65WH	65	15	PUR DS	White (WT) <input type="checkbox"/>	190	556-25007
TTAGPU15X65YE	65	15	PUR DS	Yellow (YL) <input checked="" type="checkbox"/>	190	556-25011
TTAGPU11X100WH	100	11	PUR DS	White (WT) <input type="checkbox"/>	125	556-25021
TTAGPU11X100YE	100	11	PUR DS	Yellow (YL) <input checked="" type="checkbox"/>	125	556-25020
TTAGPU15X100WH	100	15	PUR DS	White (WT) <input type="checkbox"/>	125	556-25006
TTAGPU15X100YE	100	15	PUR DS	Yellow (YL) <input checked="" type="checkbox"/>	125	556-25010

All dimensions in mm. Subject to technical changes.

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

#### Recommended Printers

Ribbon	Printer	Page
TTRC+	TT430	204

Suitable for the following industries:



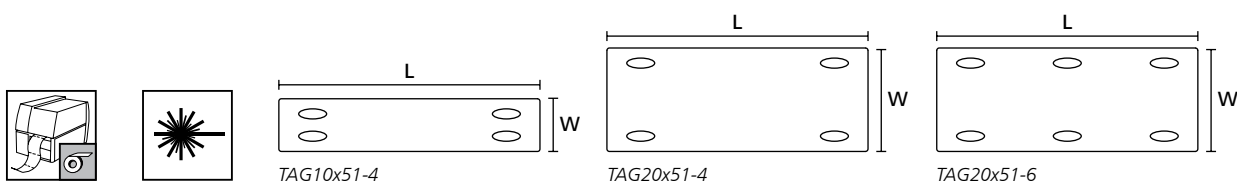
### Identification Tags for Cable Bundle "Ladder Style", Thermal Transfer

#### TAGUL – Standard TIPTAGS (White and Yellow)

- Operating temperature -55°C to +135°C
- Flammability ASTM D2671 B
- General purpose cable marker
- For larger cables and wires
- Convenient "Ladder Style" format
- Good mechanical strength and highly flexible
- Delivered in convenient storage boxes
- Applied to cables and harness assemblies with cable ties
- Suitable for retrofit
- Simply print and press out TIPTAG and apply with cable ties



TAGUL – cable markers for larger cable bundles and wires



Type	Length (L)	Width (W)	Material	Colour	Qty	Article-No.
TAGUL10X51-4WH	51	10	PO-X	White (WT) □	400	556-82010
	51	10	PO-X	White (WT) □	2 000	556-82000
TAGUL10X51-4YE	51	10	PO-X	Yellow (YL) ■	400	556-82011
	51	10	PO-X	Yellow (YL) ■	2 000	556-82001
TAGUL20X51-4WH	51	20	PO-X	White (WT) □	200	556-82012
	51	20	PO-X	White (WT) □	1 000	556-82005
TAGUL20X51-4YE	51	20	PO-X	Yellow (YL) ■	200	556-82013
	51	20	PO-X	Yellow (YL) ■	1 000	556-82004
TAGUL20X51-6WH	51	20	PO-X	White (WT) □	200	556-82014
	51	20	PO-X	White (WT) □	1 000	556-82002
TAGUL20X51-6YE	51	20	PO-X	Yellow (YL) ■	200	556-82015
	51	20	PO-X	Yellow (YL) ■	1 000	556-82003

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. More colours available on request.

#### Recommended Printers

Ribbon	Printer	Page
TTDTHOUT	TT431	204

Suitable for the following industries:



### Identification Tags for Cable Bundle, "Ladder Style", Thermal Transfer

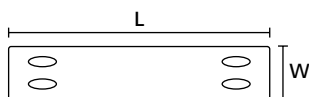
#### TAGPU – UV-stabilised (White and Yellow)

- Operating temperature -25°C to +80°C
- UV-stabilised
- Larger cables and wire bundles
- Thermal transfer or laser beam printable
- Convenient 'ladder style' format
- Good mechanical strength and highly flexible
- Delivery in convenient storage boxes
- Permanently legible
- Harsh environments
- Applied to cable and harness assemblies with cable ties
- Suitable for retrofit

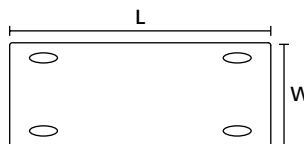


TAGPU - Tiptags "Ladder Style"

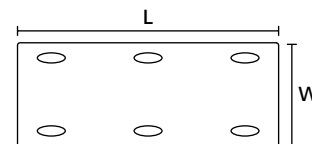
HF ✓ RoHS ✓



TAG10x51-4



TAG20x51-4



TAG20x51-6

Type	Length (L)	Width (W)	Material	Colour	Qty	Article-No.
TAGPU10X51-4WH	51	10	PUR	White (WT) <input type="checkbox"/>	400	556-80506
	51	10	PUR	White (WT) <input type="checkbox"/>	2 000	556-80500
TAGPU10X51-4YE	51	10	PUR	Yellow (YL) <input checked="" type="checkbox"/>	400	556-80507
	51	10	PUR	Yellow (YL) <input checked="" type="checkbox"/>	2 000	556-80501
TAGPU20X51-4WH	51	20	PUR	White (WT) <input type="checkbox"/>	200	556-80508
	51	20	PUR	White (WT) <input type="checkbox"/>	1 000	556-80504
TAGPU20X51-4YE	51	20	PUR	Yellow (YL) <input checked="" type="checkbox"/>	200	556-80509
	51	20	PUR	Yellow (YL) <input checked="" type="checkbox"/>	1 000	556-80505
TAGPU20X51-6WH	51	20	PUR	White (WT) <input type="checkbox"/>	200	556-80510
	51	20	PUR	White (WT) <input type="checkbox"/>	1 000	556-80502
TAGPU20X51-6YE	51	20	PUR	Yellow (YL) <input checked="" type="checkbox"/>	200	556-80511
	51	20	PUR	Yellow (YL) <input checked="" type="checkbox"/>	1 000	556-80503

All dimensions in mm. Subject to technical changes.

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

#### Recommended Printers

Ribbon	Printer	Page
TTRHT	TT431	204

Suitable for the following industries:



### Identification Tags for Cable Bundles, Thermal Transfer

#### TIPTAG MC – Metal Content (Blue)

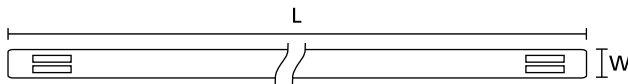
- Operating temperature -40°C to +85°C
- Metal detectable
- Marking larger cables in food and pharma industries
- Outstanding chemical resistance
- High temperature resistant
- Non-burning
- Includes holes for fastening with MCT cables ties



Metal content identification tags for a safe and clean production process

RoHS ✓

**i** Supports quality assurance in food production



Type	Length (L)	Width (W)	Material	Colour	Qty	Article-No.
TTAGMC11BEX65S	65	11	PO, MET	Blue (BL) ■	190	556-26500
TTAGMC15BEX65S	65	15	PO, MET	Blue (BL) ■	190	556-26502
TTAGMC11BEX100S	100	11	PO, MET	Blue (BL) ■	120	556-26501
TTAGMC15BEX100S	100	15	PO, MET	Blue (BL) ■	120	556-26503

All dimensions in mm. Subject to technical changes.

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

#### Recommended Printers

Ribbon	Printer	Page
TTDTHOUT	TT431	204
TTRW	TT431	204

Suitable for the following industries:



### Cable Ties with Integrated RFID Transponder

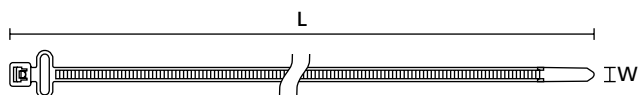
#### T50RFID – Low Frequency (LF) and High Frequency (HF)

- Idle temperature -40°C to +85°C
- Operating temperature min. -40°C to +85°C (PA66)
- Operating temperature max. -25°C to +85°C (PA66W)
- Flammability UL 94 V2
- Flexible, contactless data communication
- Clear identification of objects through unique numbering
- Faster data management compared to paper solution
- More accurate documentation processes – prevention of human errors
- Robust and resistant to harsh environments and cleaning processes
- Low frequency (LF – 125kHz) - Read only
- High frequency (HF – 13.56MHz) - Rewritable



Cable ties with RFID transponder

HF ✓ RoHS ✓



T50RFID, MCTRFID

Type	Frequency	Bundle Ø min.	Bundle Ø max.	Width (W)	Length (L)	N	Material	Colour	Qty	Article-No.
T50RFIDCLA	125kHz (LF)	1.5	50	4.6	200	225	PA66	Yellow (YL) <span style="color: yellow;">■</span>	100	111-01638
T50RFIDCHA	13,56MHz (HF)	1.5	50	4.6	200	225	PA66	Yellow (YL) <span style="color: yellow;">■</span>	100	111-01639
	13,56MHz (HF)	1.5	50	4.6	200	225	PA66	Black (BK) <span style="color: black;">■</span>	100	111-01591
	13,56MHz (HF)	1.5	50	4.6	200	225	PA66W	Black (BK) <span style="color: black;">■</span>	100	111-02406
	13,56MHz (HF)	1.5	50	4.6	200	225	PA66	Light Blue (LTBU) <span style="color: lightblue;">■</span>	100	111-01673

All dimensions in mm. Subject to technical changes.

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

#### Recommended Tools

Type	EVO7i
Page	57

Suitable for the following industries:



### Detectable Cable Ties with Integrated RFID Transponder

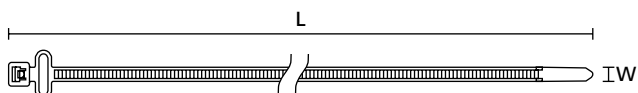
#### MCTRFID – Low Frequency (LF) and High Frequency (HF)

- Idle temperature -40°C to +85°C
- Operating temperature -25°C to +85°C
- Flammability UL 94 HB
- Magnetic or X-Ray detectable RFID cable ties (detection level depending on specific application)
- Total metal dispersion throughout tie
- For safe handling of production processes
- Blue colour for easy visual detection
- Flexible, contactless data communication
- Clear identification of objects through unique numbering
- Faster data management compared to paper solution
- More accurate documentation processes – prevention of human errors
- Robust and resistant to harsh environments and cleaning processes
- Low frequency (LF – 125kHz) - Read only
- High frequency (HF – 13.56MHz) - Rewritable
- Supports quality control



Detectable cable ties (metal content) with RFID transponder

HF ✓ RoHS ✓



T50RFID, MCTRFID

Type	Frequency	Bundle Ø min.	Bundle Ø max.	Width (W)	Length (L)	N	Material	Colour	Article-No.
MCTRFIDCLA	125kHz (LF)	1.5	50	4.6	200	225	PA66MP	Blue (BL) <span style="color: blue;">■</span>	111-01976
MCTRFIDCHA	13,56MHz (HF)	1.5	50	4.6	200	225	PA66MP	Blue (BL) <span style="color: blue;">■</span>	111-01676

All dimensions in mm. Subject to technical changes.

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

#### Recommended Tools

Type	EVO7i
Page	57

Suitable for the following industries:





## Stainless Steel Ties with RFID Transponder

### MBTRFID – High Frequency (HF) and Ultra High Frequency (UHF)

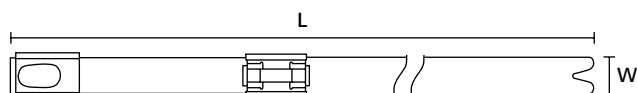
- Idle temperature -25°C to +70°C
- Operating temperature -25°C to +70°C
- Flammability non-burning (except coating)
- MBT stainless steel (316) tie complete with RFID transponder
- Harsh environments
- Flexible, contactless data communication
- Clear identification of objects through unique numbering
- Faster data management compared to paper solution
- More accurate documentation processes – prevention of human errors
- High frequency (HF – 13.56MHz)
- Ultra high frequency (UHF – 869MHz)
- Rewritable
- Where high tensile strength and durability is important



Stainless steel RFID cable ties for product identification in harsh environments

HF ✓ RoHS ✓

**i** Patented non-releasable locking feature



MBTRFID

Type	Frequency	Bundle Ø min.	Bundle Ø max.	Width (W)	Length (L)		Colour	Article-No.
MBT8HFCRFID	13,56MHz (HF)	17	50	7.9	201	1 020	Red (RD)	156-01167
MBT14HFCRFID	13,56MHz (HF)	17	102	7.9	362	1 020	Red (RD)	111-01586
MBT20HFCRFID	13,56MHz (HF)	17	152	7.9	521	1 020	Red (RD)	111-01587
MBT27HFCRFID	13,56MHz (HF)	17	203	7.9	681	1 020	Red (RD)	111-01588
MBT33HFCRFID	13,56MHz (HF)	17	254	7.9	838	1 020	Red (RD)	111-01589
MBT8HHFRFID	869MHz (UHF)	17	50	7.9	201	1 020	Red (RD)	156-01565
MBT14HHFRFID	869MHz (UHF)	17	102	7.9	362	1 020	Red (RD)	156-01566
MBT20HHFRFID	869MHz (UHF)	17	152	7.9	521	1 020	Red (RD)	156-01567
MBT27HHFRFID	869MHz (UHF)	17	203	7.9	681	1 020	Red (RD)	156-01568
MBT33HHFRFID	869MHz (UHF)	17	254	7.9	838	1 020	Red (RD)	156-01569

All dimensions in mm. Subject to technical changes.

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

### Recommended Tools

Type	MK9SST
Page	58

Suitable for the following industries:



### Accessories with RFID Transponder

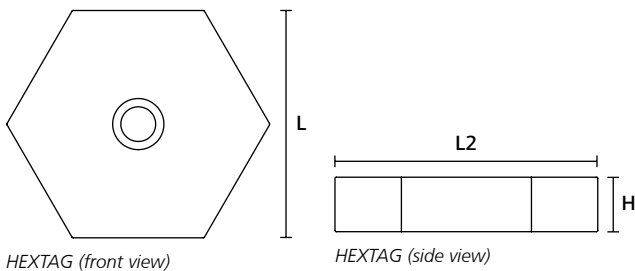
#### HEXTAG – High Frequency (HF)

- Idle temperature -40°C to +85°C
- Operating temperature -40°C to +85°C
- Flammability UL 94 V2
- Fitted using a fixing element through centre hole
- Flexible, contactless data communication
- Clear identification of objects through unique numbering
- Faster data management compared to paper solution
- More accurate documentation processes – prevention of human errors
- Robust and resistant to harsh environments and cleaning processes
- High frequency (HF – 13.56MHz)
- Rewritable
- Yellow colour for easy visual detection
- Central hole allows a simple mounting in applications where a RFID cable tie solution is not suitable



RFID HEXTAG – for applications where a RFID cable tie solution is not suitable

HF ✓ RoHS ✓



Type	Frequency	Height (H)	Length (L)	Length (L2)	Material	Colour	Article-No.
RFID HEXTAG	13,56MHz (HF)	8	33.4	38.39	PA66	Yellow (YL)	151-01582

All dimensions in mm. Subject to technical changes.

Suitable for the following industries:



## Accessories with RFID Transponder

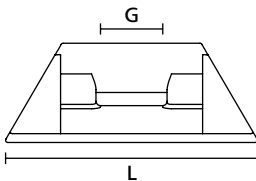
### CRADLE – High Frequency (HF)

- Idle temperature -40°C to +85°C
- Operating temperature -25°C to +85°C
- Flammability UL 94 V2
- Cable tie slot to suit HellermannTyton's standard cable ties up to 7.9mm wide
- Suitable for salt water conditions
- Flexible, contactless data communication
- Clear identification of objects through unique numbering
- Faster data management compared to paper solution
- More accurate documentation processes – prevention of human errors
- Robust and resistant to harsh environments and cleaning processes
- Date on RFID chip can be reprogrammed (HF) – no waste
- Yellow colour for easy visual detection
- Other colours and frequencies are available on request
- High frequency (HF – 13.56MHz)
- Rewritable

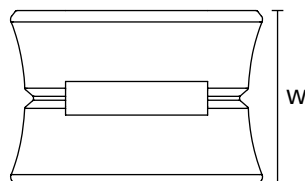


RFID CRADLE – can be used with a standard HellermannTyton cable tie

HF ✓ RoHS ✓



CRADLE (front view)



CRADLE (rear view)



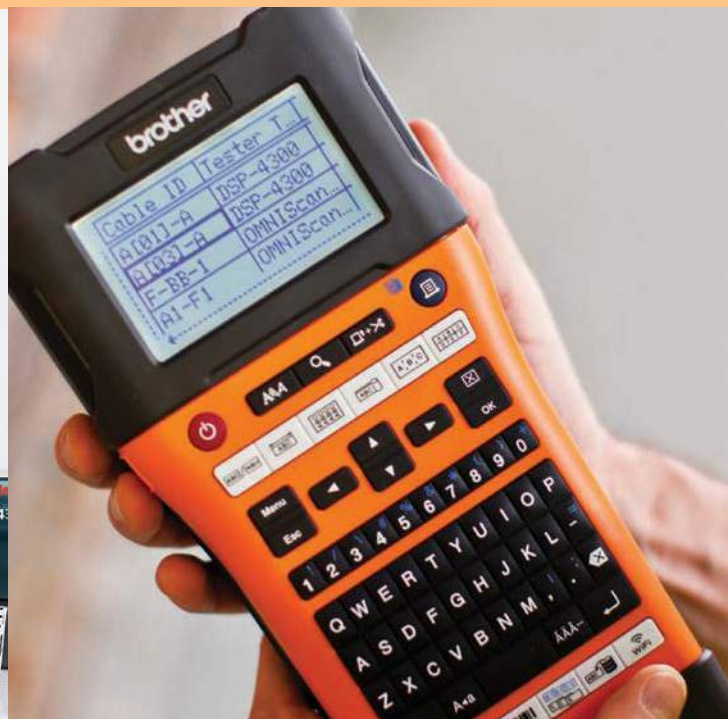
CRADLE (side view)

Type	Frequency	Width (W)	Length (L)	Strap Width max. (G)	Material	Colour	Article-No.
RFID CRADLE	13,56MHz (HF)	19.8	27.9	7.9	TPU	Yellow (YL) <span style="color: yellow;">■</span>	151-01472

All dimensions in mm. Subject to technical changes.

Suitable for the following industries:





## 5.2 Printers and Labels

### Hand-held Labelling Printers

- Brother P-touch ..... 208-209
- HellermannTyton HTZ Heatshrink Compatible Tapes ..... 208
- HellermannTyton HTZ Compatible Tapes ..... 209
- Dymo ..... 210-211
- Dymo Printer Tapes ..... 211

### Desktop Printers and Accessories

- Thermal Transfer Printers (TT431) ..... 212

### Labelling Software

- TagPrint Pro 4.0 ..... 212

### Printer Ribbons

- Thermal Printer Ribbons – Heatshrink and TIPTAGS ..... 213

### Heatshrink Labels

- Shrinkable Markers "Ladder Style" Thermal Transfer ..... 214-217

### Industrial Application Labels

- Panel Plate Labels Thermal Transfer ..... 218-219

### Security Labelling

- Tamper-Evident Security Labelling Thermal Transfer ..... 220

## Brother P-Touch D210

- 20.0mm/sec print speed
- 14 Fonts (8 Alpha, 6 Numeric)
- 617 Symbols
- 99 Frames
- Uses 6.0/9.0/12.0mm tapes
- Uses X6 AAA Alkaline Batteries (not included)
- Auto design & deco mode functions
- Easy to view LCD screen

Code	Description
PTD210	Home and office labeller



## Brother P-Touch PTH110

- Prints labels up to 12mm in width
- 180dpi Print
- Print speed of 20mm/second
- Three fonts, 10 text styles and three character sizes
- 253 Symbols
- 15 Decorative frames

Code	Description
PTH110	Home and office labeller



## HellermannTyton HTZ Heatshrink Compatible Tapes

Code	Tape (W)	Tape (L)	Colour	Article-No.
HTZHS12BKYL	12	1.5	Black/Yellow	911-01641
HTZHS6BKWT	6	1.5	Black/White	
HTZHS6BKYL	6	1.5	Black/Yellow	
HTZHS9BKWT	9	1.5	Black/White	911-01637
HTZHS9BKYL	9	1.5		
HTZHS12BKWT	12	1.5	Black/White	911-01640

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



### Brother P-Touch E300

- Complete with durable carry case
- AC adaptor included
- Advanced serialisation features
- PC style keyboard
- 20.0mm/sec print speed
- Cable wrap, cable flag, face plate, patch panel and heatshrink tubing labelling functions
- Tape widths - 6.0/9.0/12.0/18.0mm
- 2.0 x 8.0mm TZ laminated tape included (18.0mm)

Code	Description
PTE300	Industrial hand-held labeller



### Brother P-Touch PTE550

- Complete with durable carry case
- AC adaptor included
- QWERTY keypad
- 30.0mm/sec print speed
- 12 Fonts and 384 built-in symbols
- DB board, flag, cable wrap & USB download labelling functions
- Tape widths - 6.0/9.0/12.0/18.0/24.0mm
- 2.0 x 8.0mm TZ laminated tape included (12.0 & 24.0mm)
- Wi-Fi and USB

Code	Description
PTE550	Industrial hand-held labeller



### HellermannTyton HTZ Compatible Tapes

Code	Tape (W)	Length (m)	Colour	Article-No.
HTZ121	9	8	Black/CL	911-01620
HTZ131	12	8	Black/CL	911-01621
HTZ231	12	8	Black/White	911-01624
HTZ233	12	8	Blue/White	911-01626
HTZ251	24	8	Black/White	911-01628
HTZ621	9	8	Black/Yellow	911-01630
HTZ631	12	8	Black/Yellow	911-01631
HTZ641	28	8	Black/Yellow	911-01632

Tape (w) in mm. Strong adhesive tape & flexi tape available on request. Other tapes and colours available upon request.



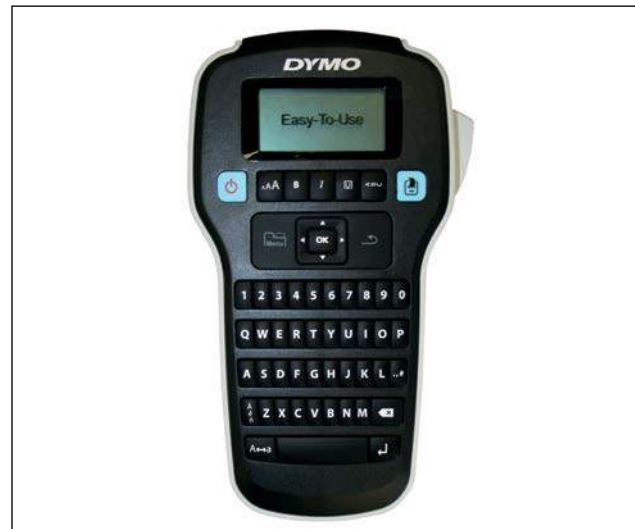
Material specifications available on request.



### Dymo Label Manager 160

- 8 Print styles
- 2 Print lines
- 6 Print sizes
- QWERTY keyboard
- 228 symbols and clip-art images
- Tape widths - 6.0/9.0/12.0mm (Standard D1 labels)
- 12.0mm/sec print speed
- 180dpi Print resolution

Code	Description
DYMO160	Industrial hand-held labeller



### Dymo Rhino M1011

- Uses 12.0mm stainless steel and aluminium labels
- Built-in hole punch
- Built-in cable tie slot punch
- Easy-to-use cutting handle
- Deep emboss ensures excellent character legibility
- Rugged cast aluminium frame

Code	Description	Width (W)	Length (m)
DYMO11	Dymo Industrial Metal Tape Embosser		
DYTM11AA	Aluminium Tape - Adhesive	12	3.6
DYTM11AL	Aluminium Tape	12	4.8
DYTM11SS	Stainless Steel Tape	12	6.4

All dimensions in mm. Subject to technical changes.



### Dymo Rhino Industrial 4200 Kit

- 5 Print styles
- 5 Print lines
- 7 Print sizes
- QWERTY keyboard
- Pre-programmed library with 150 symbols
- Tape widths - 6.0/9.0/12.0/19.0mm (IND Rhino labels)
- 15.0mm/sec print speed
- 180dpi Print resolution
- Print directly onto IND Heatshrink Tube
- Carry case

Code	Description
DYMO4200KIT	Industrial hand-held labeller



### Dymo Rhino Industrial 6000 Kit

- 5 Print styles
- 5 Print lines
- 7 Print sizes
- ABC keyboard
- Pre-programmed library with 250+ symbols
- Tape widths - 6.0/9.0/12.0/19.0/24.0mm (IND Rhino labels)
- 10.0mm/sec print speed
- 180dpi Print resolution
- Print directly onto IND heatshrink tube
- Rechargeable battery pack
- Connect to PC via USB
- Create downloadable labels on your PC using Rhino Connect Software



Code	Description
DYMO6000KIT	Industrial hand-held labeller

### Dymo Printer Tapes

Code	Width (W)	Length (m)	Material	Colour
DYT12BKWT	12	7	Laminated	Black/White
DYT12FNBKWT	12	3.5	Nylon	Black/White
DYT19FNBKWT	19	3.5	Nylon	Black/White
DYT12PPBKWT	12	3.5	Polyester	Black/White
DYT19PPBKWT	19	3.5	Polyester	Black/White
DYT12VBKWT	12	5.5	Vinyl	Black/White
DYT19VBKWT	19	3.5	Vinyl	Black/White
*DYT6HSBKYL	6	1.5	Heatshrink	Black/Yellow
*DYT9HSBKYL	9	1.5	Heatshrink	Black/Yellow
*DYT12HSBKYL	12	1.5	Heatshrink	Black/Yellow
*DYT19HSBKYL	19	1.5	Heatshrink	Black/Yellow

All dimensions in mm. Subject to technical changes.

\* Heatshrink tape 3:1 shrink ratio / Only compatible with Rhino labelling tools

#### D1 Labels feature:



UV Resistant



Water Resistant



Cold/Heat Resistant

Other tape colours and sizes available upon request.

#### Industrial Labels feature:



Easy-Peel Backing



UV Resistant



Water Resistant



Cold/Heat Resistant



Oil Resistant



Chemical Resistant





## Thermal Transfer Printer

### TT431, Small to Medium Print Volumes

- Standard applications e.g. barcodes (2D), warning symbols, graphics and alphanumeric characters
- Thermal Transfer material:
  - TIPTAG cable markets
  - Shrinkable markers
  - Labels
- Colour touch display with clear menu tree structure
- Windows compatible

#### Technical Overview

<b>Article-No.(order Code)</b>	556-00400
<b>Print Method</b>	Thermal transfer
<b>Print Resolution (dpi)</b>	300
<b>Max Print Speed (mm/s)</b>	150
<b>Max Print Width (mm)</b>	105.7
<b>Interface</b>	3x USB ports – all support 500mA
<b>Storage</b>	RAM up to 256MB Flash 50MB
<b>Software</b>	TagPrint Pro 3.0
<b>Dimensions (mm)</b>	243(W) x 189(H) x 322(L)
<b>Weight (kg)</b>	4



**i** Colour touch screen with menu based on smartphone functionality

## Labelling Software

### TagPrint Pro 4.0

- Easy to use label/marker design and printing software
- Print automation allows labels to be printed at multiple printers simultaneously
- Visual preview allows users to view label designs
- Connect or import directly from other databases including Excel, Access, text files
- Text, graphics and barcode functionalities
- Advance security feature



The easy to use software speeds up production of markers, labels and identification tags

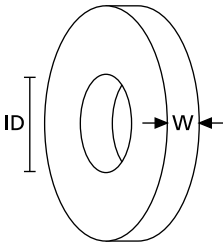
#### Technical Overview

<b>Article-No.</b>	556-00059
<b>System Requirements</b>	Windows compatible NET Framework 4 1.0 GB RAM/ 500 MB HDD

## Thermal Printer Ribbons

### Heatshrink and TIPTAGS

- High quality print
- Ribbons specifically designed to maximize print performance for recommended material
- Standard inside core diameter is 25.4mm



Ribbons for printing on tubes and Tiptags

RoHS ✓



Thermal transfer print technology heats up certain dots in print head. Transfers ink very precisely from ribbon onto print material surface.

### Ordering Information

Type	Recommended Material	Colour	Width (W)	Length (m)	Article-No.
<b>TT822OUT8 110MM</b>	TCGT/TULT	Silver (SR) ■	110	300	556-00161
<b>TTRW 30MM</b>	TCGT/TULT(DS)	White (WT) □	30	300	556-00125
<b>TTRW 60MM</b>	TCGT/TULT(DS)	White (WT) □	60	300	556-00137
<b>TTDTHOUT 40MM</b>	TCGT/TULT(DS)/TLFX(DS)/TDRT(DS)/TLFD DS/TIPTAG	Black (BK) ■	40	300	556-00139
<b>TTDTHOUT 60MM</b>	TCGT/TULT(DS)/TLFX(DS)/TDRT(DS)/TLFD DS/TIPTAG	Black (BK) ■	60	300	556-00140
<b>TTDTHOUT 100MM</b>	TCGT/TULT(DS)/TLFX(DS)/TDRT(DS)/TLFD DS/TIPTAG	Black (BK) ■	100	300	556-00141
<b>TTRHTBK 70MM</b>	THTT/THTT DS/TAGHT	Black (BK) ■	70	300	556-00204
<b>TTRHTBK 100mm</b>	THTT/THTT DS/TAGHT	Black (BK) ■	100	300	556-00210
<b>TTRHTWH 70mm</b>	THTT/THTT DS/TAGHT	White (WT) □	70	300	556-00209
<b>TTRHTWH 100mm</b>	THTT/THTT DS/TAGHT	White (WT) □	100	300	556-00211
<b>TTRC+ 30MM</b>	TIPTAG PU/TCGT/TULT	Black (BK) ■	30	300	556-00114
<b>TTRC+ 60MM</b>	TIPTAG PU/TCGT/TULT	Black (BK) ■	60	300	556-00115
<b>TTRC+ 100MM</b>	TIPTAG PU/TCGT/TULT	Black (BK) ■	100	300	556-00103

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content.

### Shrinkable Markers "Ladder Style", Termal Transfer

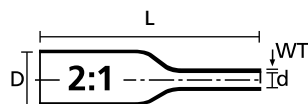
#### TLFX DS – 2:1 (Yellow and White)

- Shrink ratio 2:1
- Operating temperature -55°C to +105°C
- Min. Shrink temperature +100°C
- Low smoke propagation, density and toxicity
- High oxygen index value (35.4%)
- 50mm, 25mm and 16mm pre-cut marker options as standard, other lengths available on request
- Cable range 38.1mm to 1.2mm
- European rail approved 2:1 heatshrink marker material
- Pre-cut into a convenient "ladder" style
- Allows printing on both sides of marker
- Delivery in convenient storage boxes
- EN 45545-2 Classification R22 HL3, R23 HL3



Shrinkable rail approved markers TLFX DS

HF ✓ RoHS ✓ LFH ✓

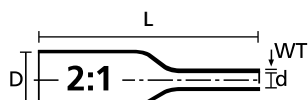


Type	Supplied ØD min.	Recovery Ød max.	Length (L)	Wall (WT)	Qty	Colour	Article-No.
TLFX24DS-2x25WH	2.4	1.2	25	0.52	10 000	White (WT) □	553-60020
TLFX24DS-2x25YE	2.4	1.2	25	0.52	10 000	Yellow (YL) ■	553-60029
TLFX24DS-1x50WH	2.4	1.2	50	0.52	5 000	White (WT) □	553-60000
TLFX24DS-1x50YE	2.4	1.2	50	0.52	5 000	Yellow (YL) ■	553-60010
TLFX32DS-2x25WH	3.2	1.6	25	0.64	10 000	White (WT) □	553-60021
TLFX32DS-2x25YE	3.2	1.6	25	0.64	10 000	Yellow (YL) ■	553-60030
TLFX32DS-1x50WH	3.2	1.6	50	0.64	5 000	White (WT) □	553-60001
TLFX32DS-1x50YE	3.2	1.6	50	0.64	5 000	Yellow (YL) ■	553-60011
TLFX48DS-2x25WH	4.8	2.4	25	0.64	10 000	White (WT) □	553-60022
TLFX48DS-2x25YE	4.8	2.4	25	0.64	10 000	Yellow (YL) ■	553-60031

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

**EN 45545-2** **ASTM** **NF F** **UNI CEI**

## TLFX DS – 2:1 (Yellow and White)



Type	Supplied ØD min.	Recovery Ød max.	Length (L)	Wall (WT)	Qty	Colour	Article-No.
TLFX48DS-1x50WH	4.8	2.4	50	0.64	5 000	White (WT) <input type="checkbox"/>	553-60002
TLFX48DS-1x50YE	4.8	2.4	50	0.64	5 000	Yellow (YL) <input checked="" type="checkbox"/>	553-60012
TLFX64DS-2x25WH	6.4	3.2	25	0.73	6 000	White (WT) <input type="checkbox"/>	553-60023
TLFX64DS-2x25YE	6.4	3.2	25	0.73	6 000	Yellow (YL) <input checked="" type="checkbox"/>	553-60032
TLFX64DS-1x50WH	6.4	3.2	50	0.73	3 000	White (WT) <input type="checkbox"/>	553-60003
TLFX64DS-1x50YE	6.4	3.2	50	0.73	3 000	Yellow (YL) <input checked="" type="checkbox"/>	553-60013
TLFX95DS-2x25WH	9.5	4.8	25	0.70	5 000	White (WT) <input type="checkbox"/>	553-60024
TLFX95DS-2x25YE	9.5	4.8	25	0.70	5 000	Yellow (YL) <input checked="" type="checkbox"/>	553-60033
TLFX95DS-1x50WH	9.5	4.8	50	0.70	2 500	White (WT) <input type="checkbox"/>	553-60004
TLFX95DS-1x50YE	9.5	4.8	50	0.70	2 500	Yellow (YL) <input checked="" type="checkbox"/>	553-60014
TLFX127DS-2x25WH	12.7	6.4	25	0.70	3 000	White (WT) <input type="checkbox"/>	553-60025
TLFX127DS-2x25YE	12.7	6.4	25	0.70	3 000	Yellow (YL) <input checked="" type="checkbox"/>	553-60034
TLFX127DS-1x50WH	12.7	6.4	50	0.70	1 500	White (WT) <input type="checkbox"/>	553-60005
TLFX127DS-1x50YE	12.7	6.4	50	0.70	1 500	Yellow (YL) <input checked="" type="checkbox"/>	553-60015
TLFX190DS-2x25WH	19	9.5	25	0.78	3 000	White (WT) <input type="checkbox"/>	553-60026
TLFX190DS-2x25YE	19	9.5	25	0.78	3 000	Yellow (YL) <input checked="" type="checkbox"/>	553-60035
TLFX190DS-1x50WH	19	9.5	50	0.78	1 500	White (WT) <input type="checkbox"/>	553-60006
TLFX190DS-1x50YE	19	9.5	50	0.78	1 500	Yellow (YL) <input checked="" type="checkbox"/>	553-60016
TLFX254DS-2x25WH	25.4	12.7	25	0.93	2 000	White (WT) <input type="checkbox"/>	553-60027
TLFX254DS-2x25YE	25.4	12.7	25	0.93	2 000	Yellow (YL) <input checked="" type="checkbox"/>	553-60036
TLFX254DS-1x50WH	25.4	12.7	50	0.93	1 000	White (WT) <input type="checkbox"/>	553-60007
TLFX254DS-1x50YE	25.4	12.7	50	0.93	1 000	Yellow (YL) <input checked="" type="checkbox"/>	553-60017
TLFX381DS-2x25WH	38.1	19.1	25	0.98	1 000	White (WT) <input type="checkbox"/>	553-60028
TLFX381DS-2x25YE	38.1	19.1	25	0.98	1 000	Yellow (YL) <input checked="" type="checkbox"/>	553-60037
TLFX381DS-1x50WH	38.1	19.1	50.0	0.98	500	White (WT) <input type="checkbox"/>	553-60008
TLFX381DS-1x50YE	38.1	19.1	50.0	0.98	500	Yellow (YL) <input checked="" type="checkbox"/>	553-60018

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content.

## Recommended Printers

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TTDTHOUT	TT431	212

Suitable for the following industries:



EN 45545-2 ASTM NF F UNI CEI

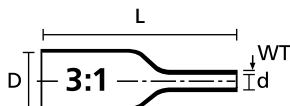
### Shrinkable Markers "Ladder Style", Thermal Transfer

#### TULT DS – 3:1 (Yellow and White)

- Shrink ratio 3:1
- Operating temperature -55°C to +135°C
- Min. shrink temperature +90°C
- 50mm, 25mm and 16mm pre-cut marker options as standard, other lengths available on request
- Good mechanical strength and resistance to organic solvents and chemicals
- Highly flexible
- Delivery in convenient storage boxes
- Pre-cut and formatted into a convenient "ladder" style
- Printing on both sides of the marker
- UL recognised



TULT DS – shrinkable markers with good mechanical strength for a wide range of applications



Type	Supplied ØD min.	Recovery Ød max.	Length (L)	Wall (WT)	Material	Qty	Colour	Article-No.
TULT2.4-0.8DS-2x25WH	2.4	0.8	25	0.73	PO-X	2 000	White (WT) <input type="checkbox"/>	553-71002
TULT2.4-0.8DS-2x25YE	2.4	0.8	25	0.73	PO-X	2 000	Yellow (YL) <input checked="" type="checkbox"/>	553-71003
TULT2.4-0.8DS-1x50WH	2.4	0.8	50	0.73	PO-X	1 000	White (WT) <input type="checkbox"/>	553-71000
TULT2.4-0.8DS-1x50YE	2.4	0.8	50	0.73	PO-X	1 000	Yellow (YL) <input checked="" type="checkbox"/>	553-71001

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content.

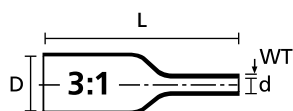
#### Recommended Printers

Ribbon	Printer	Page
TTDTHOUT	TT431	212

Suitable for the following industries:



## TULT DS – 3:1 (Yellow and White)



Type	Supplied ØD min.	Recovery Ød max.	Length (L)	Wall (WT)	Material	Qty	Colour	Article-No.
TULT3-1DS-2x25WH	3	1	25	0.6	PO-X	2 000	White (WT) □	553-71008
TULT3-1DS-2x25YE	3	1	25	0.6	PO-X	2 000	Yellow (YL) ■	553-71009
TULT3-1DS-1x50WH	3	1	50	0.6	PO-X	1 000	White (WT) □	553-71006
TULT3-1DS-1x50YE	3	1	50	0.6	PO-X	1 000	Yellow (YT) ■	553-71007
TULT4.8-1.6DS-2x25WH	4.8	1.6	25	0.66	PO-X	2 000	White (WT) □	553-71014
TULT4.8-1.6DS-2x25YE	4.8	1.6	25	0.66	PO-X	2 000	Yellow (YL) ■	553-71015
TULT4.8-1.6DS-1x50WH	4.8	1.6	50	0.66	PO-X	1 000	White (WT) □	553-71012
TULT4.8-1.6DS-1x50YE	4.8	1.6	50	0.66	PO-X	1 000	Yellow (YL) ■	553-71013
TULT6-2DS-2x25WH	6	2	25	0.69	PO-X	2 000	White (WT) □	553-71020
TULT6-2DS-2x25YE	6	2	25	0.69	PO-X	2 000	Yellow (YL) ■	553-71021
TULT6-2DS-1x50WH	6	2	50	0.69	PO-X	1 000	White (WT) □	553-71018
TULT6-2DS-1x50YE	6	2	50	0.69	PO-X	1 000	Yellow (YL) ■	553-71019
TULT9-3DS-2x25WH	9	3	25	0.79	PO-X	1 000	White (WT) □	553-71026
TULT9-3DS-2x25YE	9	3	25	0.79	PO-X	1 000	Yellow (YL) ■	553-71027
TULT9-3DS-1x50WH	9	3	50	0.79	PO-X	500	White (WT) □	553-71024
TULT9-3DS-1x50YE	9	3	50	0.79	PO-X	500	Yellow (YL) ■	553-71025
TULT12-4DS-2x25WH	12	4	25	0.84	PO-X	1 000	White (WT) □	553-71032
TULT12-4DS-2x25YE	12	4	25	0.84	PO-X	1 000	Yellow (YL) ■	553-71033
TULT12-4DS-1x50WH	12	4	50	0.84	PO-X	500	White (WT) □	553-71030
TULT12-4DS-1x50YE	12	4	50	0.84	PO-X	500	Yellow (YL) ■	553-71031
TULT18-6DS-2x25WH	18	6	25	1	PO-X	1 000	White (WT) □	553-71038
TULT18-6DS-2x25YE	18	6	25	1	PO-X	1 000	Yellow (YL) ■	553-71039
TULT18-6DS-1x50WH	18	6	50	1	PO-X	500	White (WT) □	553-71036
TULT18-6DS-1x50YE	18	6	50	1	PO-X	500	Yellow (YL) ■	553-71037
TULT24-8DS-2x25WH	24	8	25	1.2	PO-X	500	White (WT) □	553-71044
TULT24-8DS-2x25YE	24	8	25	1.2	PO-X	500	Yellow (YL) ■	553-71045
TULT24-8DS-1x50WH	24	8	50	1.2	PO-X	250	White (WT) □	553-71042
TULT24-8DS-1x50YE	24	8	50	1.2	PO-X	250	Yellow (YL) ■	553-71043
TULT39-13DS-2x25WH	39	13	25	1.25	PO-X	500	White (WT) □	553-71050
TULT39-13DS-2x25YE	39	13	25	1.25	PO-X	500	Yellow (YL) ■	553-71051
TULT39-13DS-1x50WH	39	13	50.0	1.25	PO-X	250	White (WH) □	553-71048
TULT39-13DS-1x50YE	39	13	50.0	1.25	PO-X	250	Yellow (YL) ■	553-71049

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content.



### Panel Plate Labels, Thermal Transfer

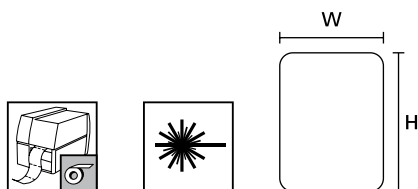
#### HELATAG 1221 (Silver)

- Operating temperature -40°C to +90°C
- Curing temperature from +4°C
- Adhesive acrylic
- Thickness of foil 625µm
- Excellent resistance to ageing, weathering, UV-radiation and influence of chemicals and solvents
- Cost-effective replacement for engraved plastic plates, no need for additional label holder
- High performance adhesive and compressible foam backing ensures optimal adhesion to uneven surfaces
- Rounded corners ensure better long term durability of adhesion
- Print high contrast text and barcodes
- Print 'On Site' not order 'Off Site'
- Special sizes and colours available on request
- For outstanding chemical resistance use TT122OUT



Panel labels are an ideal replacement for engraved plates

RoHS ✓



Type	Width (W)	Height (H)	Width of Liner (WL)	Material	Qty	Colour	Article-No.
TAG13-07TDK1-1221-SR	13	7	21	PET	1 000	Silver (SR) ■	596-00573
TAG22-22TDK1-1221-SR	22	22	28	PET	1 000	Silver (SR) ■	596-00574
TAG27-08TDK1-1221-SR	27	8	33	PET	1 000	Silver (SR) ■	596-00575
TAG27-12.5TDK1-1221-SR	27	12.5	33	PET	1 000	Silver (SR) ■	596-00576
TAG27-15TDK1-1221-SR	27	15	33	PET	1 000	Silver (SR) ■	596-00577
TAG27-18TDK1-1221-SR	27	18	33	PET	1 000	Silver (SR) ■	596-00578
TAG27-27TDK1-1221-SR	27	27	33	PET	1 000	Silver (SR) ■	596-00579
TAG35-18TDK1-1221-SR	35	18	41	PET	1 000	Silver (SR) ■	596-00580
TAG45-15TDK1-1221-SR	45	15	51	PET	1 000	Silver (SR) ■	596-00581
TAG45-25TDK1-1221-SR	45	25	51	PET	1 000	Silver (SR) ■	596-00582
TAG60-30TDK1-1221-SR	60	30	66	PET	500	Silver (SR) ■	596-00583
TAG90-45TDK1-1221-SR	90	45	96	PET	500	Silver (SR) ■	596-00584
TAG100-30TDK1-1221-SR	100	30	106	PET	250	Silver (SR) ■	596-00585
TAG100-70TDK1-1221-SR	100	70	106	PET	250	Silver (SR) ■	596-00586

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

#### Recommended Printers

Ribbon	Printer	Page
TTDTHOUT	TT431	212
TT822OUT	TT431	212

Suitable for the following industries:



### Panel Plate Labels, Thermal Transfer

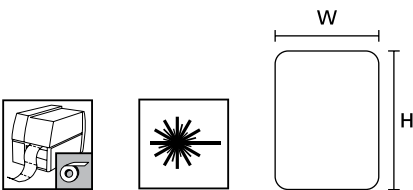
#### HELATAG 1220 (White)

- Operating temperature -40°C to +90°C
- Curing temperature from +4°C
- Adhesive Acrylic
- Thickness of foil 625µm
- Excellent resistance to ageing, weathering and UV-radiation. Extensive resistance to the influence of chemicals and solvents.
- Cost-effective replacement for engraved plastic plates, no need for additional label holder
- High performance adhesive and compressible foam backing ensures optimal adhesion to uneven surfaces if required
- Rounded corners ensure better long term durability of adhesion
- Print high contrast text and barcodes
- Print 'On Site' not order 'Off Site'
- Special sizes and colours are possible on request
- For outstanding chemical resistance use TT1220UT



Panel labels Helatag 1220 – high performance adhesive ensures optimal adhesion to uneven surfaces

RoHS ✓



Type	Width (W)	Height (H)	Width of Liner (WL)	Material	Labels per Row	Qty	Colour	Article-No.
TAG13-07TDK1-1220-WH	13	7	21	PET	1 pc.	1 000	White (WT) <input type="checkbox"/>	596-00560
TAG22-22TDK1-1220-WH	22	22	28	PET	1 pc.	1 000	White (WT) <input type="checkbox"/>	596-00561
TAG27-08TDK1-1220-WH	27	8	33	PET	1 pc.	1 000	White (WT) <input type="checkbox"/>	596-00562
TAG27-12.5TDK1-1220-WH	27	12.5	33	PET	1 pc.	1 000	White (WT) <input type="checkbox"/>	596-00558
TAG27-15TDK1-1220-WH	27	15	33	PET	1 pc.	1 000	White (WT) <input type="checkbox"/>	596-00563
TAG27-18TDK1-1220-WH	27	18	33	PET	1 pc.	1 000	White (WT) <input type="checkbox"/>	596-00564
TAG27-27TDK1-1220-WH	27	27	33	PET	1 pc.	1 000	White (WT) <input type="checkbox"/>	596-00565
TAG35-18TDK1-1220-WH	35	18	41	PET	1 pc.	1 000	White (WT) <input type="checkbox"/>	596-00566
TAG45-15TDK1-1220-WH	45	15	51	PET	1 pc.	1 000	White (WT) <input type="checkbox"/>	596-00567
TAG45-25TDK1-1220-WH	45	25	51	PET	1 pc.	1 000	White (WT) <input type="checkbox"/>	596-00568
TAG60-30TDK1-1220-WH	60	30	66	PET	1 pc.	500	White (WT) <input type="checkbox"/>	596-00569
TAG90-45TDK1-1220-WH	90	45	96	PET	1 pc.	500	White (WT) <input type="checkbox"/>	596-00570
TAG100-30TDK1-1220-WH	100	30	106	PET	1 pc.	250	White (WT) <input type="checkbox"/>	596-00571
TAG100-70TDK1-1220-WH	100	70	106	PET	1 pc.	250	White (WT) <input type="checkbox"/>	596-00572

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content.

#### Recommended Printers

Ribbon	Printer	Page
TTDTHOUT	TT431	212
TT822OUT	TT431	212

Suitable for the following industries:





## Tamper-Evident Security Labelling, Thermal Transfer

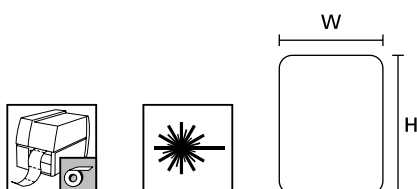
### HELATAG 1203 (Silver)

- Operating temperature -40°C to +120°C
- Curing temperature from +7°C
- Adhesive Acrylic
- Thickness of foil 53µm
- Excellent resistance to water, alcohol, most oils, greases, fuel, freezing fluid, brake fluid, aliphatic solvents, weak acids, salts and alkalis
- Tamper-evident labels leave clear reminder that label has been removed
- Mark assets securely and unambiguously
- Print labels with customer unique references
- Use text, graphics and barcodes as required



Highly visible tamper evidence

HF ✓ RoHS ✓



Type	Width (W)	Height (H)	Width of Liner (WL)	Material	Qty	Colour	Article-No.
TAG71TD6-1203-SR	12.7	11.1	101.6	PET	15 000	Silver (SR) ■	596-71120
TAG15TD3-1203-SR	25.4	12.7	85.1	PET	7 500	Silver (SR) ■	596-51203
TAG27TD2-1203-SR	38.1	19.1	85.1	PET	2 500	Silver (SR) ■	596-71203
TAG67TD2-1203-SR	38.1	31.8	85.1	PET	1 000	Silver (SR) ■	596-67120
TAG73TD1-1203-SR	50.8	25.4	55	PET	2 000	Silver (SR) ■	596-73120
TAG66TD1-1203-SR	50.8	36.5	56.8	PET	1 000	Silver (SR) ■	596-66120
TAG68TD1-1203-SR	63.5	25.4	69	PET	2 000	Silver (SR) ■	596-68120
TAG63TD1-1203-SR	63.5	38.1	70	PET	1 000	Silver (SR) ■	596-63120
TAG76TD1-1203-SR	63.5	50.8	70	PET	500	Silver (SR) ■	596-76120
TAG62TD1-1203-SR	76.2	50.8	82	PET	500	Silver (SR) ■	596-21203
TAG64TD1-1203-SR	88.9	36.5	95	PET	1 000	Silver (SR) ■	596-64120
TAG98TD1-1203-SR	101	160	105	PET	250	Silver (SR) ■	596-98120
TAG97TD1-1203-SR	101.6	74	106	PET	500	Silver (SR) ■	596-97120

### Recommended Printers

Ribbon	Printer	Page
TT822OUT	TT431	212

Suitable for the following industries:







Inspired by Quality

## 6.0 Crimping Terminals

### 6.1 Pre-Insulation Terminals, Connectors, Bootlace Ferrules and Brass Terminals

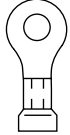
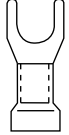
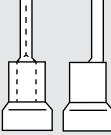



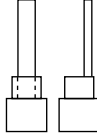

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### 6.2 Lugs, Ferrules and Pin Terminals

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## Crimping Terminals

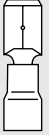
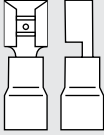
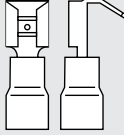


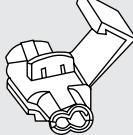

Pre-Insulated Terminals and Bootlace Ferrules Selection Guide

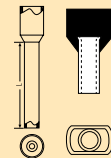
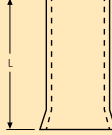





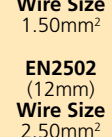







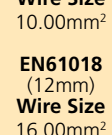






Wire Range mm <sup>2</sup>	STUD (mm)	RING R(E)	SPADE S(E)	PIN P(E)	BUTT UT(E)	BULLET		BLADE	
						MALE ULM(E)	FEMALE ULF(E)	FLAT FB(E)	HOOK HB(E)
									
0.34 - 1.57 (Size 1)	10	(T) 1R10						(T) 1FB10 (10 x 2.3)	(T) 1HB (16.8 x 4.6)
	8	(T) 1R8							
	6	(T) 1R6	(T) 1S6A‡	(T) 1P10 (10)	1UT (24.2 x 4)	(T) 1ULM4 (4)	(T) 1ULF4 (4)	(T) 1FB11 (11 x 3.0)	1 HB3 (16.8 x 3)
	5	(T) 1R5	(T) 1S5A‡						
	4	(T) 1R4	(T) 1S4A‡					(T) 1FB14 (14 x 3)	
	3,5		(T) 1S35						
	3	(T) 1R3	(T) 1S3					(T) 1FB18 (18 x 2.3)	
1.17 - 3.24 (Size 2)	10	(T) 2R10							
	8	(T) 2R8		(T) 2P10 (10)	2UT (24.6 x 4.5)	(T) 2ULM4 (4)	(T) 2ULF4 (4)	(T) 2FB9 (9 x 2.8)	2HB (16.8 x 4.6)
	6	(T) 2R6	2S6A‡	(T) 2P12 (12)		(T) 2ULM5 (5)	(T) 2ULF5 (5)	(T) 2FB13 (13 x 2.4)	
	5	(T) 2R5	2S5A‡						
	4	(T) 2R4A‡	2S4A‡					(T) 2FB18 (18 x 2.2)	2HB3 (16.8 x 3)
	3,5	(T) 2R35	2S35						
2.50 - 6.00 (Size 3)	12	(T) 3R12						(T) 3FB10 (10 x 2.8)	3HB (17.2 x 4.6)
	10	(T) 3R10							
	8	(T) 3R8							
	6	(T) 3R6	(T) 3S6A‡	(T) 3P13 (13)	3UT (26.5 x 6.3)	(T) 3ULM5 (5)	(T) 3ULF5 (5)	(T) 3FB14 (14 x 4.5)	3HB3 (17.2 x 3)
	5	(T) 3R5	(T) 3S5						
	4	(T) 3R4	(T) 3S4A‡						
	3,5	(T) 3R35							

● 0.25 - 1.65mm<sup>2</sup> - 19Amp 600V ● 1.04 - 2.63mm<sup>2</sup> - 27Amp 600V ● 2.63 - 6.64mm<sup>2</sup> - 48Amp 600V

NOTE: 1) For inner copper tube (Twingrip) use prefix (T). 2) A‡ Narrower Option. 3) Easy Entry (E)

All dimensions are in mm

DISCONNECT			FULLY INSULATED DISCONNECT		QUICK SPLICE QS	CLOSED END CONNECTORS CE
MALE DM(E)	FEMALE DF(E)	PIGGY-BACK PB(E)	MALE F-DM	FEMALE F-DF		
						
(T) 1DM (6.35)	(T) 1DF	(10 x 2.3)	(4.6)	TF1DF (6.4)	1QS	CE1
(T) 1DM4 (4.8)	(T) 1DF4 (4.8)	(T) 1PB (6.4)		TF1DF4 (4.8)		
(T) 1DM2 (2.8)	(T) 1DF2 (2.8)		F1DMY (6.4 Nylon)	TF1DF2 (2.8)		
(T) 2DM (6.35)	(T) 2DF (6.4)	(T) 2PB (6.4)		TF2DF (6.4)	2QS	CE2
(T) 2DM4 (4.8)	(T) 2 DF4 (4.8)		F2DMY (6.4 Nylon)	TF2DF4 (4.8)		
(T) 3DM (6.35)	(T) 3DF (6.4)	(T) 3PB (6.4)		TF3DF (6.4)	3QS	
	(T) 3DF9 (9.4)		F3DMY (6.4 Nylon)	F3DFY (6.4 Nylon)		

BOOTLACE FERRULES	
INSULATED	UN-INSULATED
	
E0208BL (8mm) Wire Size 0.20mm <sup>2</sup>	EN0506 (8mm) Wire Size 0.50mm <sup>2</sup>
	
E0308TQ (8mm) Wire Size 0.30mm <sup>2</sup>	EN7506 (10mm) Wire Size 0.75mm <sup>2</sup>
	
E0510WT (8mm) Wire Size 0.50mm <sup>2</sup>	EN1010 (10mm) Wire Size 1.00mm <sup>2</sup>
	
E0710BL (10mm) Wire Size 0.75mm <sup>2</sup>	EN1510 (10mm) Wire Size 1.50mm <sup>2</sup>
	
E1010RD (10mm) Wire Size 1.00mm <sup>2</sup>	EN2502 (12mm) Wire Size 2.50mm <sup>2</sup>
	
E1510BK (10mm) Wire Size 1.50mm <sup>2</sup>	EN4012 (12mm) Wire Size 4.00mm <sup>2</sup>
	
E2512GY (12mm) Wire Size 2.50mm <sup>2</sup>	EN6012 (12mm) Wire Size 6.00mm <sup>2</sup>
	
E4012OR (12mm) Wire Size 4.00mm <sup>2</sup>	EN10012 (12mm) Wire Size 10.00mm <sup>2</sup>
	
E6012GR (12mm) Wire Size 6.00mm <sup>2</sup>	EN61018 (12mm) Wire Size 16.00mm <sup>2</sup>
	
E10012BN (12mm) Wire Size 10.00mm <sup>2</sup>	
	
E16018IV (12mm) Wire Size 16.00mm <sup>2</sup>	
	
E25022BK (22mm) Wire Size 25.00mm <sup>2</sup>	
	
E35025RD (25mm) Wire Size 35.00mm <sup>2</sup>	
Also available in twin entry	

**Pre-Insulated: Pre-Packs**

- Stranded copper wire only



Pre-Insulated Terminals




Type	Name	Description	Colour	Qty	Article-No.
PRPK1	Pre-insulated Ring Terminal 6mm (1R6)	Wire range: 0.25 - 1.65mm <sup>2</sup> Max current: 19A Max voltage: 600V Max temperature: 75°C	Red (RD) ■	10	911-00543
PRPK2	Pre-insulated Ring Terminal 5mm (1R5)	Wire range: 0.25 - 1.65mm <sup>2</sup> Max current: 19A Max voltage: 600V Max temperature: 75°C	Red (RD) ■	10	911-00554
PRPK3	Pre-insulated Ring Terminal 4mm (1R4)	Wire range: 0.25 - 1.65mm <sup>2</sup> Max current: 19A Max voltage: 600V Max temperature: 75°C	Red (RD) ■	10	911-00565
PRPK4	Pre-insulated Ring Terminal 6mm (2R6)	Wire range: 1.04 - 2.63mm <sup>2</sup> Max current: 27A Max voltage: 600V Max temperature: 75°C	Blue (BL) ■	8	911-00576
PRPK5	Pre-insulated Ring Terminal 5mm (2R5)	Wire range: 1.04 - 2.63mm <sup>2</sup> Max current: 27A Max voltage: 600V Max temperature: 75°C	Blue (BL) ■	10	911-00579
PRPK6	Pre-insulated Ring Terminal 4mm (2R4)	Wire range: 1.04 - 2.63mm <sup>2</sup> Max current: 27A Max voltage: 600V Max temperature: 75°C	Blue (BL) ■	10	911-00580
PRPK7	Pre-insulated Ring Terminal 8mm (3R8)	Wire range: 2.63 - 6.64mm <sup>2</sup> Max current: 48A Max voltage: 600V Max temperature: 75°C	Yellow (YL) ■	6	911-00581
PRPK8	Pre-insulated Ring Terminal 6mm (3R6)	Wire range: 2.63 - 6.64mm <sup>2</sup> Max current: 48A Max voltage: 600V Max temperature: 75°C	Yellow (YL) ■	6	911-00582
PRPK9	Pre-insulated Ring Terminal 5mm (3R5)	Wire range: 2.63 - 6.64mm <sup>2</sup> Max current: 48A Max voltage: 600V Max temperature: 75°C	Yellow (YL) ■	6	911-00583
PRPK10	Pre-insulated Spade Terminal 3.5mm (1S35)	Wire range: 0.25 - 1.65mm <sup>2</sup> Max current: 19A Max voltage: 600V Max temperature: 75°C	Red (RD) ■	10	911-00544
PRPK11	Pre-insulated Spade Terminal 4mm (1S4A)	Wire range: 0.25 - 1.65mm <sup>2</sup> Max current: 19A Max voltage: 600V Max temperature: 75°C	Red (RD) ■	10	911-00545

Type	Name	Description	Colour	Qty	Article-No.
PRPK12	Pre-insulated Spade Terminal 3.5mm (2S35)	Wire range: 1.04 - 2.63mm <sup>2</sup> Max current: 27A Max voltage: 600V Max temperature: 75°C	Blue (BL) ■	10	911-00546
PRPK13	Pre-insulated Spade Terminal 5mm (2S5A)	Wire range: 1.04 - 2.63mm <sup>2</sup> Max current: 27A Max voltage: 600V Max temperature: 75°C	Blue (BL) ■	10	911-00547
PRPK14	Pre-insulated Pin Terminal 10mm (1P10)	Wire range: 0.25 - 1.65mm <sup>2</sup> Max current: 19A Max voltage: 600V Max temperature: 75°C	Red (RD) ■	10	911-00548
PRPK15	Pre-insulated Pin Terminal 12mm (2P12)	Wire range: 1.04 - 2.63mm <sup>2</sup> Max current: 27A Max voltage: 600V Max temperature: 75°C	Blue (BL) ■	10	911-00549
PRPK16	Pre-insulated Butt Terminal (1UT)	Wire range: 0.25 - 1.65mm <sup>2</sup> Max current: 19A Max voltage: 600V Max temperature: 75°C	Red (RD) ■	10	911-00550
PRPK17	Pre-insulated Butt Terminal (2UT)	Wire range: 1.04 - 2.63mm <sup>2</sup> Max current: 27A Max voltage: 600V Max temperature: 75°C	Blue (BL) ■	8	911-00551
PRPK18	Pre-insulated Male Disc 6.35mm (1DM)	Wire range: 0.25 - 1.65mm <sup>2</sup> Max current: 19A Max voltage: 300V Max temperature: 75°C	Red (RD) ■	10	911-00552
PRPK19	Pre-insulated Male Disc 6.35mm (2DM)	Wire range: 1.04 - 2.63mm <sup>2</sup> Max current: 27A Max voltage: 300V Max temperature: 75°C	Blue (BL) ■	10	911-00553
PRPK20	Pre-insulated Female Disc 6.35mm (1DF)	Wire range: 0.25 - 1.65mm <sup>2</sup> Max current: 19A Max voltage: 300V Max temperature: 75°C	Red (RD) ■	10	911-00555
PRPK21	Pre-insulated Female Disc 6.35mm (2DF)	Wire range: 1.04 - 2.63mm <sup>2</sup> Max current: 27A Max voltage: 300V Max temperature: 75°C	Blue (BL) ■	10	911-00556
PRPK22	Pre-insulated Piggyback 6.35mm (1PB)	Wire range: 0.25 - 1.65mm <sup>2</sup> Max current: 19A Max voltage: 300V Max temperature: 75°C	Red (RD) ■	10	911-00557
PRPK23	Pre-insulated Piggyback 6.35mm (2PB)	Wire range: 1.04 - 2.63mm <sup>2</sup> Max current: 27A Max voltage: 300V Max temperature: 75°C	Blue (BL) ■	6	911-00558
PRPK24	Pre-insulated Bullet Male (1ULM4)	Wire range: 0.25 - 1.65mm <sup>2</sup> Max current: 19A Max voltage: 600V Max temperature: 75°C	Red (RD) ■	8	911-00559
PRPK25	Pre-insulated Bullet Male (2ULM4)	Wire range: 1.04 - 2.63mm <sup>2</sup> Max current: 27A Max voltage: 600V Max temperature: 75°C	Blue (BL) ■	8	911-00560
PRPK26	Pre-insulated Bullet Female (1ULF4)	Wire range: 0.25 - 1.65mm <sup>2</sup> Max current: 19A Max voltage: 600V Max temperature: 75°C	Red (RD) ■	8	911-00561
PRPK27	Pre-insulated Bullet Female (2ULF4)	Wire range: 1.04 - 2.63mm <sup>2</sup> Max current: 27A Max voltage: 600V Max temperature: 75°C	Blue (BL) ■	8	911-00562




Type	Name	Description	Colour	Qty	Article-No.
PRPK28	Pre-insulated Terminals ASSORTED	Various sizes	Red (RD) ■ Blue (BL) ■ Yellow (YL) ■	Kit	911-00563
PRPK29	Pre-insulated Terminals ASSORTED Including Tool	Various sizes	Red (RD) ■ Blue (BL) ■ Yellow (YL) ■	Kit	911-00564
PRPK30	Pre-insulated Spade Terminal 5mm (1S5A)	Wire range: 0.25 - 1.65mm <sup>2</sup> Max current: 19A Max voltage: 600V Max temperature: 75°C	Red (RD) ■	10	911-00566
PRPK31	Pre-insulated Spade Terminal 4mm (2S4A)	Wire range: 1.04 - 2.63mm <sup>2</sup> Max current: 27A Max voltage: 600V Max temperature: 75°C	Blue (BL) ■	10	911-00567
PRPK32	Pre-insulated Female Disc 2.5mm (1DF2)	Wire range: 0.25 - 1.65mm <sup>2</sup> Max current: 19A Max voltage: 300V Max temperature: 75°C	Red (RD) ■	10	911-00568
PRPK33	Pre-insulated Female Disc 4.75mm (1DF4)	Wire range: 0.25 - 1.65mm <sup>2</sup> Max current: 19A Max temperature: 75°C Max voltage: 300V	Red (RD) ■	10	911-00569
PRPK34	Pre-insulated Female Disc 4.75mm (2DF4)	Wire range: 1.04 - 2.63mm <sup>2</sup> Max current: 27A Max voltage: 300V Max temperature: 75°C	Blue (BL) ■	10	911-00570
PRPK35	Pre-insulated Female Disc 6.35mm (3DF)	Wire range: 2.63 - 6.64mm <sup>2</sup> Max current: 48A Max voltage: 300V Max temperature: 75°C	Yellow (YL) ■	8	911-00571
PRPK36	Pre-insulated Male Disc 6.35mm (3DM)	Wire range: 2.63 - 6.64mm <sup>2</sup> Max current: 48A Max voltage: 300V Max temperature: 75°C	Yellow (YL) ■	8	911-00572
PRPK37	Pre-insulated Female Disc 9.4mm (3DF9)	Wire range: 2.63 - 6.64mm <sup>2</sup> Max current: 48A Max voltage: 300V Max temperature: 75°C	Yellow (YL) ■	5	911-00573
PRPK38	Pre-insulated Female Full Ins. Disc 6.35mm (F1DFY)	Wire range: 0.25 - 1.65mm <sup>2</sup> Max current: 27A Max voltage: 300V Max temperature: 105°C	Red (RD) ■	5	911-00574
PRPK39	Pre-insulated Female Full Ins. Disc 6.35mm (F2DFY)	Wire range: 1.04 - 2.63mm <sup>2</sup> Max current: 27A Max voltage: 300V Max temperature: 105°C	Blue (BL) ■	5	911-00575
PRPK40	Pre-insulated Butt Terminal (3UT)	Wire range: 2.63 - 6.64mm <sup>2</sup> Max current: 48A Max voltage: 600V Max temperature: 75°C	Yellow (YL) ■	6	911-00577
PRPK41	Pre-insulated Ring Terminal 10mm (3R10)	Wire range: 2.63 - 6.64mm <sup>2</sup> Max current: 48A Max voltage: 600V Max temperature: 75°C	Yellow (YL) ■	5	911-00578



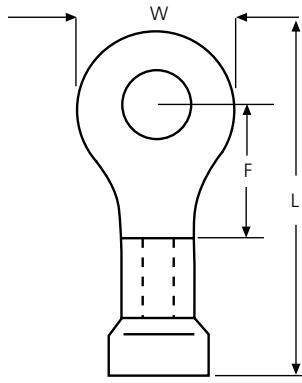
## Pre-Insulated Pre-Packs: Assortment

Type	Image	Description	Contents	Article-No.
K150T		105 Pieces: Pre-Insulated Terminal Kit (includes crimping tool)	<b>10x (1R4, 2R4, 2R5, 1S35, 2S35, 1UT, 2UT)</b> <b>5x (3R5, 3S5, 3UT, 1DF, 2DF, 1DM, 2DM)</b> 1x LY2001	911-00541
K175		135 Pieces: Pre-Insulated Terminal Kit (excludes crimping tool)	<b>15x (2R35A)</b> <b>10x (1UT, 2UT, 1DF, 2DF, 1DM, 2DM, 1R4, 1R5, 2R4, 2R5, 1S35)</b> <b>5x (3UT, 3R5)</b>	911-00517
K300		235 Pieces: Pre-Insulated Terminal Kit (excludes tool)	<b>25x (1R4, 1R5, 1S35)</b> <b>20x (2R4, 1DF, 2DF, 1DM, 2DM)</b> <b>15x 2R35A</b> <b>10x (2R5, 1UT, 2UT)</b> <b>5x (3R5, 3R6, 3UT)</b>	911-00511

## Recommended Tools

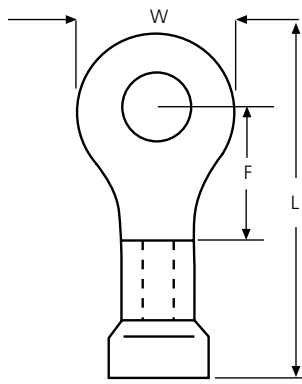
Type	Image	Description	Crimping Range (mm <sup>2</sup> )	Article-No.
HYYT1		Crimper: Pre-Insulated Terminals (DIY)	0.5 - 1 (Red) ■ 1.1 - 2.5 (Blue) ■ 4 - 6 (Yellow) ■	991-00212
HYYT7		Crimper: Pre-Insulated Terminals	0.5 - 1 (Red) ■ 1.1 - 2.5 (Blue) ■ 4 - 6 (Yellow) ■	911-00213
HS2004		Crimper: Insulated Terminals (DIY)	0.5 1.25 - 2 2.5 3 5 5.5	911-00207

## Pre-Insulated Ring Terminals

Type	Diagram	Wire Range (mm <sup>2</sup> )	Colour	Stud Size	Dimensions			Article-No.
					W	L	F	
1R3		0.5 - 1.65	Red	3.2	5.5	17.5	5	911-00586
1R4		0.5 - 1.65		4.3	8	20.5	7	911-00587
1R5		0.5 - 1.65		5.3	8	20.5	7	911-00589
1R6		0.5 - 1.65		6.4	11.6	26.8	11	911-00590
1R8		0.5 - 1.65		8.4	11.6	26.8	11	911-00591
1R10		0.5 - 1.65		10.5	13.6	30.5	13.9	911-00585
2S35		1.04 - 2.63	Blue	3.7	6.6	17.8	6.6	911-00611
2R4		1.04 - 2.63		4.3	8.5	21.8	8.5	911-00594
2R5		1.04 - 2.63		5.3	9.5	21.8	9.5	911-00596
2R6		1.04 - 2.63		6.4	12	26.8	11	911-00597
2R8		1.04 - 2.63		8.4	12	26.8	11	911-00598
2R10		1.04 - 2.63		10.5	13.6	30.5	13.9	911-00592
3R35		2.63 - 6.64	Yellow	3.7	7.2	22.7	6.1	911-00599
3R4		2.63 - 6.64		4.3	9.5	26.6	9.1	911-00600
3R5		2.63 - 6.64		5.3	9.5	26.6	9.1	911-00601
3R6		2.63 - 6.64		6.4	12	29.5	10.5	911-00602
3R8		2.63 - 6.64		8.4	15	34	13.5	911-00603
3R10		2.63 - 6.64		10.5	15	34	13.5	911-00604
3R12	2.63 - 6.64		12	19.2	38.6	16	911-00605	

All dimensions in mm. Subject to technical changes.

## TwinGrip - Inner Copper Tube

Type	Diagram	Wire Range (mm <sup>2</sup> )	Colour	Stud Size	Dimensions			Article-No.
					W	L	F	
T1R3		0.25 - 1.65	Red	3.2	5.5	17.5	5	911-00671
T1R4		0.25 - 1.65		4.3	8	20.5	7	911-00672
T1R5		0.25 - 1.65		5.3	8	20.5	7	911-00673
T1R6		0.25 - 1.65		6.4	11.6	26.8	11	911-00674
T1R8		0.25 - 1.65		8.4	11.6	26.8	11	911-00675
T1R10		0.25 - 1.65		10.5	13.6	30.5	13.9	911-00670
T2R4		1.04 - 2.63	Blue	4.3	8.5	21.8	8.5	911-00692
T2R5		1.04 - 2.63		5.3	9.5	21.8	9.5	911-00693
T2R6		1.04 - 2.63		6.4	12	26.8	11	911-00694
T2R8		1.04 - 2.63		8.4	12	26.8	11	911-00695
T2R10		1.04 - 2.63		10.5	13.6	30.5	13.9	911-00691
T3R35		2.63 - 6.64		Yellow	3.7	7.2	22.7	6.1
(T)3R4		2.63 - 6.64	4.3		9.5	26.6	9.1	911-00715
(T)3R5		2.63 - 6.64	5.3		9.5	26.6	9.1	911-00716
(T)3R6		2.63 - 6.64	6.4		12	29.5	10.5	911-00717
(T)3R8		2.63 - 6.64	8.4		15	34	13.5	911-00718
(T)3R10		2.63 - 6.64	10.5		15	34	13.5	911-00712
(T)3R12		2.63 - 6.64		12	19.2	38.6	16	911-00713

All dimensions in mm. Subject to technical changes.

● 0.25 - 1.65mm<sup>2</sup> - 19Amp 600V ● 1.04 - 2.63mm<sup>2</sup> - 27Amp 600V ● 2.63 - 6.64mm<sup>2</sup> - 48Amp 600V

## Pre-Insulated spade terminals

Type	Diagram	Wire Range (mm <sup>2</sup> )	Colour	Stud Size	Dimensions			Article-No.
					W	L	F	
1S35		0.25 - 1.65	Red	3.7	6.4	21	6.5	911-00607
1S3		0.25 - 1.65		3.2	5.7	21	6.5	911-00606
1S4A		0.25 - 1.65		4.3	6.4	21	6.5	
1S5A		0.25 - 1.65		5.3	8.1	21	6.5	911-00609
1S6A		0.25 - 1.65		6.4	9.5	21	6.5	911-00610
2S35		1.04 - 2.63	Blue	3.7	6	21	6.5	911-00611
2S4A		1.04 - 2.63		4.3	6.4	21	6.5	911-00608
2S5A		1.04 - 2.63		5.3	7.9	21	6.5	911-00613
2S6A		1.04 - 2.63		6.4	9.3	21	6.5	911-00614
3S4A		2.63 - 6.64		Yellow	4.3	8.3	25.5	7
3S5		2.63 - 6.64	5.3		9	25.5	7	911-00616
3S6A		2.63 - 6.64	6.4		9	25.5	7	911-00617

All dimensions in mm. Subject to technical changes.

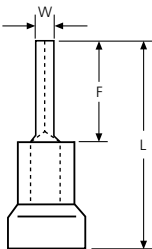
## TwinGrip - Inner Copper Tube

Type	Diagram	Wire Range (mm <sup>2</sup> )	Colour	Stud Size	Dimensions			Article-No.
					W	L	F	
T1S3		0.25 - 1.65	Red	3.2	5.7	21	6.5	911-00676
T1S4A		0.25 - 1.65		4.3	6.4	21	6.5	911-00677
T1S5A		0.25 - 1.65		5.3	8.1	21	6.5	911-00678
T1S6A		0.25 - 1.65		6.4	9.5	21	6.5	911-00679
T2S35		1.04 - 2.63		Blue	3.7	6	21	6.5
T2S4A		1.04 - 2.63	4.3		6.4	21	6.5	911-00697
T2S5A		1.04 - 2.63	5.3		7.9	21	6.5	
T2S6A		1.04 - 2.63	6.4		9.3	21	6.5	911-00698
T3S4A		2.63 - 6.64	Yellow		4.3	8.3	25.5	7
T3S5		2.63 - 6.64		5.3	9	25.5	7	911-00719
T3S6A		2.63 - 6.64		6.4	9	25.5	7	911-00720

All dimensions in mm. Subject to technical changes.

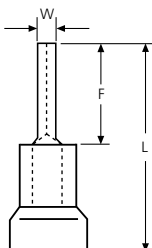
● 0.25 - 1.65mm<sup>2</sup> - 19Amp 600V ● 1.04 - 2.63mm<sup>2</sup> - 27Amp 600V ● 2.63 - 6.64mm<sup>2</sup> - 48Amp 600V

### Pre-Insulated Pin Terminals

Type	Diagram	Wire Range (mm <sup>2</sup> )	Colour	Dimensions			Article-No.
				W	L	F	
1P10		0.25 - 1.65		1.9	19.8	10	911-00618
2P10		1.04 - 2.63		1.9	19.8	10	911-00619
2P12		1.04 - 2.63		1.9	19.8	10	911-00620
3P13		2.63 - 6.64		1.9	21.8	12	911-00621

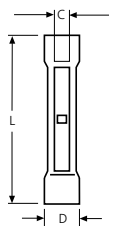
All dimensions in mm. Subject to technical changes.

### TwinGrip - Inner Copper Tube

Type	Diagram	Wire Range (mm <sup>2</sup> )	Colour	Dimensions			Article-No.
				W	L	F	
T1P10		0.25 - 1.65		1.9	19.8	10	911-00685
T2P12		1.04 - 2.63		1.9	19.8	10	911-00703
T3P13		2.63 - 6.64		1.9	21.8	12	911-00723

All dimensions in mm. Subject to technical changes.

### Pre-Insulated Butt Connectors

Type	Diagram	Wire Range (mm <sup>2</sup> )	Colour	Dimensions			Article-No.
				D	C	L	
1UT		0.25 - 1.65		4	1.7	24.6	911-00622
2UT		1.04 - 2.63		4.5	2.3	24.6	911-00623
3UT		2.63 - 6.64		6.3	3.4	26.5	911-00624

All dimensions in mm. Subject to technical changes.

● 0.25 - 1.65mm<sup>2</sup> - 19Amp 600V ● 1.04 - 2.63mm<sup>2</sup> - 27Amp 600V ● 2.63 - 6.64mm<sup>2</sup> - 48Amp 600V

### Pre-Insulated Blade Terminals

Type	Diagram	Wire Range (mm <sup>2</sup> )	Colour	Dimensions			Article-No.
				W	L	F	
1FB10		0.25 - 1.65	Red	2.3	19.8	10	911-00625
1FB11		0.25 - 1.65		3	20.8	11	911-00626
1FB14		0.25 - 1.65		3	23.8	14	911-00627
1FB18		0.25 - 1.65		2.2	27.8	18	911-00628
2FB9		1.04 - 2.63	Blue	2.8	18.8	9	911-00629
2FB13		1.04 - 2.63		2.4	22.8	13	911-00630
2FB18		1.04 - 2.63		2.2	27.8	18	911-00631
3FB10		2.63 - 6.64	Yellow	2.8	23	10	911-00632
3FB14		2.63 - 6.64		4.5	27	14	911-00633

All dimensions in mm. Subject to technical changes.

### TwinGrip - Inner Copper Tube

Type	Diagram	Wire Range (mm <sup>2</sup> )	Colour	Dimensions			Article-No.
				W	L	F	
T1FB10		0.25 - 1.65	Red	2.3	19.8	10	911-00680
T1FB11		0.25 - 1.65		3	20.8	11	911-00681
T1FB14		0.25 - 1.65		3	23.8	14	911-00682
T1FB18		0.25 - 1.65		2.2	27.8	18	911-00683
T2FB9		1.04 - 2.63	Blue	2.8	18.8	9	911-00700
T2FB13		1.04 - 2.63		2.4	22.8	13	
T2FB18		1.04 - 2.63		2.2	27.8	18	911-00699
T3FB10		2.63 - 6.64	Yellow	2.8	23	10	911-00721

All dimensions in mm. Subject to technical changes.

### Pre-Insulated Hook Blade Terminals

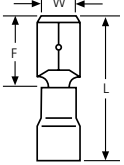
Type	Diagram	Wire Range (mm <sup>2</sup> )	Colour	Dimensions			Article-No.
				W	L	F	
1HB3		0.25 - 1.6	Red	3	27.2	16.8	911-00635
1HB		0.25 - 1.6		4.6	27.2	16.8	911-00634
2HB3		1.04 - 2.63	Blue	3	27.2	16.8	911-00637
2HB		1.04 - 2.63		4.6	27.2	16.8	911-00636
3HB3		2.63 - 6.64	Yellow	3	30.2	17.2	911-00639
3HB		2.63 - 6.64		4.6	30.2	17.2	911-00638

All dimensions in mm. Subject to technical changes.

### TwinGrip - Inner Copper Tube

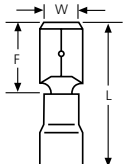
Type	Diagram	Wire Range (mm <sup>2</sup> )	Colour	Dimensions			Article-No.
				W	L	F	
T1HB		0.25 - 1.6	Red	4.6	27.2	16.8	911-00684
T2HB		1.04 - 2.63	Blue	4.6	27.2	16.8	
T3HB		2.63 - 6.64	Yellow	4.6	30.2	17.2	911-00722

### Pre-Insulated Male Disconnect

Type	Diagram	Wire Range (mm <sup>2</sup> )	Colour	Dimensions			Article-No.
				W	L	F	
1DM4		0.25 - 1.65	Red	4.8	19	6.5	911-00640
1DM		0.25 - 1.65		6.35	21	7.7	
2DM4		1.04 - 2.63	Blue	4.8	10	6.5	911-00641
2DM		1.04 - 2.63		6.35	21	7.7	
3DM		2.63 - 6.64	Yellow	6.35	24	7.7	911-00642

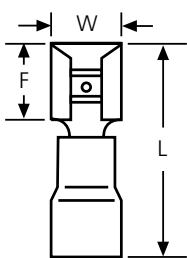
All dimensions in mm. Subject to technical changes.

### Twingrip - Inner Copper Tube

Type	Diagram	Wire Range (mm <sup>2</sup> )	Colour	Dimensions			Article-No.
				W	L	F	
T1DM4		0.25 - 1.65	Red	4.8	19	6.5	911-00643
T1DM		0.25 - 1.65		6.35	21	7.7	
T2DM4		1.04 - 2.63	Blue	4.8	10	6.5	911-00644
T2DM		1.04 - 2.63		6.35	21	7.7	
T3DM		2.63 - 6.64	Yellow	6.35	24	7.7	911-00726

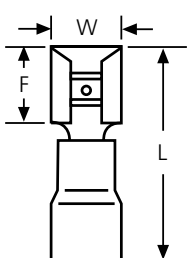
All dimensions in mm. Subject to technical changes.

### Pre-Insulated Female Disconnect

Type	Diagram	Wire Range (mm <sup>2</sup> )	Colour	Dimensions			Article-No.	
				W	L	F		
1DF2		0.25 - 1.65	Red	3.2	18.6	6.5	911-00646	
1DF4		0.25 - 1.65		5	19	6.4		911-00647
1DF		0.25 - 1.65		6.6	20.5	7.3		
2DF4		1.04 - 2.63	Blue	5	19	6.4	911-00649	
2DF		1.04 - 2.63		6.6	20.5	7.3		
2DF9		1.04 - 2.63		10	25.5	12		
3DF		2.63 - 6.64	Yellow	6.6	23.5	7.3	911-00650	
3DF9		2.63 - 6.64		10	28.5	12		911-00651

All dimensions in mm. Subject to technical changes.

### Twingrip - Inner Copper Tube

Type	Diagram	Wire Range (mm <sup>2</sup> )	Colour	Dimensions			Article-No.	
				W	L	F		
T1DF2		0.25 - 1.65	Red	3.2	18.6	6.5	911-00687	
T1DF4		0.25 - 1.65		5	19	6.4		911-00688
T1DF		0.25 - 1.65		6.6	20.5	7.3		
T2DF4		1.04 - 2.63	Blue	5	19	6.4	911-00705	
T2DF		1.04 - 2.63		6.6	20.5	7.3		
T2DF9		1.04 - 2.63		10	25.5	12		
T3DF		2.63 - 6.64	Yellow	6.6	23.5	7.3	911-00724	
T3DF9		2.63 - 6.64		10	28.5	12		911-00725

All dimensions in mm. Subject to technical changes.

● 0.25 - 1.65mm<sup>2</sup> - 19Amp 600V ● 1.04 - 2.63mm<sup>2</sup> - 27Amp 600V ● 2.63 - 6.64mm<sup>2</sup> - 48Amp 600V

## Fully Pre-Insulated Female Disconnect

### Twingrip - Inner Copper Tube

Type	Diagram	Wire Range (mm <sup>2</sup> )	Colour	Dimensions			Article-No.
				W	L	F	
T1DF2		0.25 - 1.65	Red	3.8	19	6.4	911-00687
T1DF4		0.25 - 1.65		5	19.3	6.4	911-00688
T1DF		0.25 - 1.65		6.6	22	7.3	911-00686
T2DF4		1.04 - 2.63	Blue	5	19.3	6.4	911-00705
T2DF		1.04 - 2.63		6.6	22	7.3	911-00704
T2DF9		1.04 - 2.63	10.0	25.5	12.0	911-02004	
T3DF		2.63 - 6.64	Yellow	6.6	24	7.3	911-00724
T3DF9		2.63 - 6.64		10	28.5	12	911-00725

All dimensions in mm. Subject to technical changes.

### Twingrip - Inner Copper Tube

Type	Diagram	Wire Range (mm <sup>2</sup> )	Colour	Dimensions			Article-No.
				W	L	F	
TF1DF2		0.25 - 1.65	Red	3.8	19	6.4	
TF1DF4		0.25 - 1.65		5	19.3	6.4	
TF1DF		0.25 - 1.65		6.6	22	7.3	
TF2DF4		1.04 - 2.63	Blue	5	19.3	6.4	
TF2DF		1.04 - 2.63		6.6	22	7.3	911-35179
TF3DF		2.63 - 6.64	Yellow	6.6	24	7.3	911-01836
TF3DF9		2.63 - 6.64		10	28.5	12	

All dimensions in mm. Subject to technical changes.

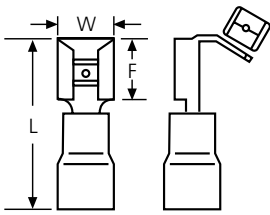
## Fully Pre-Insulated Male Disconnect

Type	Diagram	Wire Range (mm <sup>2</sup> )	Colour	Dimensions			Article-No.
				W	L	F	
F1DMY		0.34-1.57	Red	6.4	25	6.5	911-01045
F2DMY		1.17-3.24	Blue	6.4	25	6.5	911-01046
F3DMY		2.5-6.0	Yellow	6.4	28	7	911-01047

All dimensions in mm. Subject to technical changes.

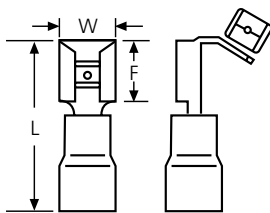
● 0.25 - 1.65mm<sup>2</sup> - 19Amp 600V ● 1.04 - 2.63mm<sup>2</sup> - 27Amp 600V ● 2.63 - 6.64mm<sup>2</sup> - 48Amp 600V

### Pre-Insulated Piggy Pack Disconnect

Type	Diagram	Wire Range (mm <sup>2</sup> )	Colour	Dimensions			Article-No.
				W	L	F	
1PB		0.25 - 1.65		6.6	22	8	911-00659
2PB		1.04 - 2.63		6.6	22	8	911-00727

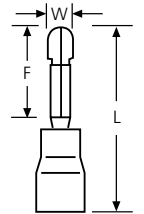
All dimensions in mm. Subject to technical changes.

### Twingrip - Inner Copper Tube

Type	Diagram	Wire Range (mm <sup>2</sup> )	Colour	Dimensions			Article-No.
				W	L	F	
T1PB		0.25 - 1.65		6.6	22	8	911-00660
T2PB		1.04 - 2.63		6.6	22	8	911-00708

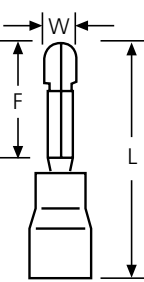
All dimensions in mm. Subject to technical changes.

### Pre-Insulated Bullet Disconnect

Type	Diagram	Wire Range (mm <sup>2</sup> )	Colour	Dimensions			Article-No.
				W	L	F	
1ULM4		0.25 - 1.65		4	21.5	8.5	911-00661
2ULM4		1.04 - 2.63		4	21.5	8.5	911-00662
3ULM4		2.63 - 6.64		4	24	8.5	
3ULM5		2.63 - 6.64		5	24	8.5	

All dimensions in mm. Subject to technical changes.

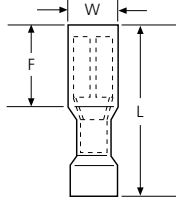
### Twingrip - Inner Copper Tube

Type	Diagram	Wire Range (mm <sup>2</sup> )	Colour	Dimensions			Article-No.
				W	L	F	
T1ULM4		0.25 - 1.65		4	21.5	8.5	911-00690
T2ULM4		1.04 - 2.63		4	21.5	8.5	911-00710
T3ULM4		2.63 - 6.64		4	24	8.5	911-00663
T3ULM5		2.63 - 6.64		5	24	8.5	911-00663

All dimensions in mm. Subject to technical changes.

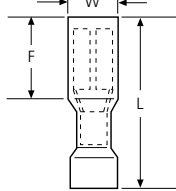


## Pre-Insulated Female Bullet Disconnect

Type	Diagram	Wire Range (mm <sup>2</sup> )	Colour	Dimensions			Article-No.
				W	L	F	
1ULF4		0.25 - 1.65	Red	3.9	21.5	7.3	911-00664
2ULF4		1.04 - 2.63	Blue	3.9	25.5	7.3	911-00665
2ULF5		1.04 - 2.63		5.9	25.5	7	
3ULF5		2.63 - 6.64	Yellow	4.9	24.5	7	




All dimensions in mm. Subject to technical changes.

## Twingrip - Inner Copper Tube

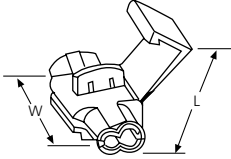
Type	Diagram	Wire Range (mm <sup>2</sup> )	Colour	Dimensions			Article-No.
				W	L	F	
T1ULF4		0.25 - 1.65	Red	3.9	21.5	7.3	911-00666
T2ULF4		1.04 - 2.63	Blue	3.9	25.5	7.3	911-00667
T2ULF5				5.9	25.5	7	911-00668
T3ULF5		2.63 - 6.64	Yellow	4.9	24.5	7	911-00669

All dimensions in mm. Subject to technical changes.

## Recommended Tools

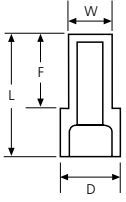
Type	Image	Description	Crimping Range (mm <sup>2</sup> )	Article-No.
HYYT1		Crimper: Pre-Insulated Terminal (DIY)	0.5 - 1 (Red) <span style="color:red">■</span> 1.1 - 2.5 (Blue) <span style="color:blue">■</span> 4 - 6 (Yellow) <span style="color:yellow">■</span>	991-00212
HYYT7		Crimper: Pre-Insulated Terminal	0.5 - 1 (Red) <span style="color:red">■</span> 1.1 - 2.5 (Blue) <span style="color:blue">■</span> 4 - 6 (Yellow) <span style="color:yellow">■</span>	911-00213
HS2004		Crimper: Insulated Terminal (DIY)	0.5 1.25 - 2 2.5 3 5 5.5	911-00207

## Quick Splice Connectors

Type	Diagram	Wire Range (mm <sup>2</sup> )	Colour	Dimensions		Article-No.
				W	L	
1QS		0.25	Red	20	27	911-00728
2QS		2	Blue	20	27	911-00729
3QS		5.5	Yellow	20.5	34.5	911-00730

All dimensions in mm. Subject to technical changes.

## Closed-End Connectors

Type	Diagram	Wire Range (mm <sup>2</sup> )	Dimensions				Article-No.
			W	L	F	D	
CE1		1.25	5.3	21	8	9.8	911-00734
CE2		2	6	21	9	10	911-00735

All dimensions in mm. Subject to technical changes.

### Bootlace Ferrules

#### Insulated

Type	Diagram	Wire Range Insulation (mm <sup>2</sup> )	Dimensions						Colour	Article-No.
			L	F	W	B	C	D		
E0208BL		0.25	8	12.4	1.9	4.4	0.8	1.1	Blue (BL) <span style="color:blue">■</span>	911-00736
E0308TQ		0.34	8	12.4	1.9	4.4	0.8	1.1	Turquoise (TQ) <span style="color:teal">■</span>	911-00737
E0510WT		0.5	10	16.0	2.6	6.0	1	1.3	White (WT) <span style="border:1px solid black; display:inline-block; width:10px; height:10px;"></span>	911-00738
E0710BL		0.75	10	16.3	3	6.3	1.2	1.5	Blue (BL) <span style="color:blue">■</span>	911-00739
E1010RD		1	10	16.3	3	6.3	1.4	1.7	Red (RD) <span style="color:red">■</span>	911-01012
E1510BK		1.5	10	16.4	3.5	6.3	2	1.7	Black (BK) <span style="background-color:black; color:black">■</span>	911-01013
E2512GY		2.5	12	19.4	4	7.4	2.3	2.6	Grey (GY) <span style="background-color:grey; color:grey">■</span>	911-01015
E4012OR		4	12	19.4	4.5	7.4	2.8	3.2	Orange (OR) <span style="color:orange">■</span>	911-00740
E6012GR		6	12	20.5	6	8.5	3.5	3.9	Green (GR) <span style="color:green">■</span>	911-00741
E10012BN		10	12	20.8	7.5	8.8	4.5	4.9	Brown (BN) <span style="color:brown">■</span>	911-00742
E16018IV		16	18	28	8.7	10	5.8	6.2	Ivory (IV) <span style="background-color:yellow; color:yellow">■</span>	911-00743

All dimensions in mm. Subject to technical changes.

#### Twin Entry Insulated

Type	Diagram	Wire Range Insulation (mm <sup>2</sup> )	Dimensions						Colour	Article-No.
			L	F	W	B	C	D		
TE0508WT		0.5	14.5	8	5	3.6	1.5	1.8	White (WT) <span style="border:1px solid black; display:inline-block; width:10px; height:10px;"></span>	911-00744
TE0710GY		0.75	14.7	8	5.5	3.5	1.8	2.1	Grey (GY) <span style="background-color:grey; color:grey">■</span>	911-00745
TE1010RD		1	17.1	10	5.5	4	2	2.3	Red (RD) <span style="color:red">■</span>	911-00747
TE1512BK		1.5	19.5	12	6.4	4.2	2.3	2.6	Black (BK) <span style="background-color:black; color:black">■</span>	911-00748
TE2513BL		2.5	21.5	13	8	5	2.9	3.3	Blue (BL) <span style="color:blue">■</span>	911-00749
TE4012GY		4	23.1	12	8.8	5.7	3.8	4.2	Grey (GY) <span style="background-color:grey; color:grey">■</span>	911-00750
TE6014YL		6	26.1	14	9.5	6.8	4.9	5.3	Yellow (YL) <span style="background-color:yellow; color:yellow">■</span>	911-00751
TE10014RD		10	26.6	14	12.1	8	6.5	6.9	Red (RD) <span style="color:red">■</span>	911-00746
TE16014IV		16	31.3	14	19	10.5	8.3	8.7	Ivory (IV) <span style="background-color:yellow; color:yellow">■</span>	

All dimensions in mm. Subject to technical changes.

#### Uninsulated

Type	Diagram	Wire Range (mm <sup>2</sup> )	Dimensions				Article-No.
			L	F	W	C	
EN0506		0.5	6	1.3	1.7	1	911-00752
EN0710		0.75	10	1.5	1.9	1.2	911-00758
EN1010		1	10	1.7	2.2	1.4	911-00760
EN1510		1.5	10	2	2.5	1.7	911-00761
EN2512		2.5	12	2.6	3.3	2.3	911-00764
EN4012		4	12	3.2	3.9	2.8	911-00765
EN6012		6	12	3.9	4.7	3.5	911-00766
EN10012		10	12	4.9	5.8	4.5	911-00759
EN16018		16	18	6.2	7.2	5.8	911-00762

### Brass - Open Barrel Terminals

#### Uninsulated Disconnect - Female



Type	Diagram	Wire size (mm <sup>2</sup> )	Dimensions		
			L	C	W
UDF		0.5 - 2	19	7.5	6.6
UDF2			16	6.4	3.2
UDF4			15.5	6.5	5
UDFC			19	7.4	6.8

All dimensions in mm. Subject to technical changes. "C" - with clip

#### Uninsulated Disconnect - Male



Type	Diagram	Wire size (mm <sup>2</sup> )	Dimensions		
			L	C	W
UDM		0.5 - 2	20	7.5	6.3

All dimensions in mm. Subject to technical changes.

#### Uninsulated Ring Lug



Type	Diagram	Wire size (mm <sup>2</sup> )	Dimensions		
			L	C	W
UR10		0.5 - 2	34	24	18.5
UR8			26	17.5	13.8
UR6			20.8	12.6	10
UR5			20.8	12.6	10
UR4			19.4	11.2	8.5
UR3			15.6	9.4	7

All dimensions in mm. Subject to technical changes.

#### Uninsulated Bullet - Female / Male



Type	Diagram	Wire size (mm <sup>2</sup> )	Dimensions		
			L	C	W
UULF4		0.5 - 2	17	6.7	3.95
UULM4			17.8	8.4	4

All dimensions in mm. Subject to technical changes.

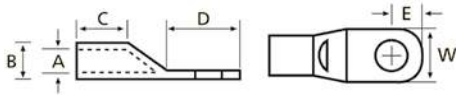
#### Uninsulated Spade



Type	Diagram	Wire size (mm <sup>2</sup> )	Dimensions		
			L	C	W
US4		0.5 - 2	22	6.8	6.6

All dimensions in mm. Subject to technical changes.

### HT Heavy Duty Lugs

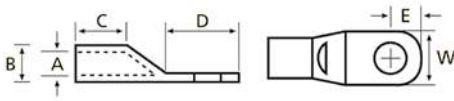


Cable Size (mm <sup>2</sup> )	Stud	Type	Barrel				Spade			Article-No.
			A (IØ)	B (OØ)	T (Thickness)	C (Length)	D (Length)	E (Hole to End)	W (Width)	
1.5	3	HT13	1.9	3.8	0.95	7	9	5	7	911-00789 911-00790 911-00791
	4	HT14	1.9	3.8	0.95	7	12	5	7	
	5	HT15	1.9	3.8	0.95	7	12	5	8	
	6	HT16	1.9	3.8	0.95	7	13	6	9	
2.5	3	HT23	2.4	4.2	0.90	8	9	5	7	911-00792
	4	HT24	2.4	4.2	0.90	8	12	5	7	911-00793
	5	HT25	2.4	4.2	0.90	8	12	5	9	911-00794
	6	HT26	2.4	4.2	0.90	8	13	6	10	911-00795
	8	HT28	2.4	4.2	0.90	8	15	8	12	911-00796
4	3	HT43	2.8	4.7	0.95	8	9	5	7	911-00797 911-00798 911-00799 911-00800 911-00801
	4	HT44	2.8	4.7	0.95	8	12	5	7	
	5	HT45	2.8	4.7	0.95	8	12	6	9	
	6	HT46	2.8	4.7	0.95	8	13	5	10	
	8	HT48	2.8	4.7	0.95	8	17	7	13	
	10	HT410	2.8	4.7	0.95	11	19	8	14	
6	4	HT64	3.4	5.3	0.95	9	12	5	8	911-00802
	5	HT65	3.4	5.3	0.95	9	12	5	9	911-00803
	6	HT66	3.4	5.3	0.95	9	13	6	10	911-00804
	8	HT68	3.4	5.3	0.95	9	17	7	13	911-00805
	10	HT610	3.4	5.3	0.95	11	20	8	15	911-00806
10	5	HT105	4.4	6.3	0.95	11	12	5	9	911-00807
	6	HT106	4.4	6.3	0.95	11	13	6	10	911-00808
	8	HT108	4.4	6.3	0.95	11	17	8	13	911-00809
	10	HT1010	4.4	6.3	0.95	11	19	8	15	911-00810
	12	HT1012	4.4	6.3	0.95	12	20	10	19	911-00811
16	5	HT165	5.5	7.6	1.05	12	13	6	11	911-00812
	6	HT166	5.5	7.6	1.05	12	13	6	11	911-00813
	8	HT168	5.5	7.6	1.05	12	18	8	13	911-00814
	10	HT1610	5.5	7.6	1.05	12	20	8	15	911-00815
	12	HT1612	5.5	7.6	1.05	12	25	11	18	911-00816
	16	HT1616	5.5	7.6	1.05	12	27	13	24	911-00817
25	6	HT256	6.9	9	1.05	15	16	6	14	911-00818
	8	HT258	6.9	9	1.05	15	17	8	14	911-00819
	10	HT2510	6.9	9	1.05	15	18	8	16	911-00820
	12	HT2512	6.9	9	1.05	15	21	11	18	911-00821
35	6	HT356	8.2	10.7	1.25	15	18	8	16	911-00822
	8	HT358	8.2	10.7	1.25	15	18	9	16	911-00822
	10	HT3510	8.2	10.7	1.25	15	19	9	16	911-00823
	12	HT3512	8.2	10.7	1.25	15	22	10	18	911-00824
	16	HT3516	8.2	10.7	1.25	16	30	13	24	911-00825
	6	HT506	10	12.8	1.4	16	18	8	18	911-00826
50	8	HT508	10	12.8	1.4	16	18	9	18	911-00827
	10	HT5010	10	12.8	1.4	17	24	10	20	911-00828
	12	HT5012	10	12.8	1.4	18	24	10	20	911-00829
	14	HT5014	10	12.8	1.4	18	30	13	26	911-00830
	16	HT5016	10	12.8	1.4	18	30	13	26	911-00830

Voltage range: up to 1000V.

All dimensions in mm. Subject to technical changes.

## HT Heavy Duty Lugs



Cable Size (mm <sup>2</sup> )	Stud	Type	Barrel				Spade			Article-No.
			A (IØ)	B (OØ)	T (Thickness)	C (Length)	D (Length)	E (Hole to End)	W (Width)	
70	8	HT708	11.7	15	1.65	21	20	10	21	911-00831
	10	HT7010	11.7	15	1.65	21	26	11	22	911-00832
	12	HT7012	11.7	15	1.65	21	28	12	22	911-00833
	16	HT7016	11.7	15	1.65	22	32	14	28	911-00834
	20	HT7020	11.7	15	1.65	22	34	15	30	911-00835
95	8	HT958	13.5	17.4	1.95	23	24	10	25	911-00836
	10	HT9510	13.5	17.4	1.95	23	26	13	26	911-00837
	12	HT9512	13.5	17.4	1.95	23	28	13	26	911-00838
	16	HT9516	13.5	17.4	1.95	23	32	14	28	911-00839
	20	HT9520	13.5	17.4	1.95	23	36	16	30	911-00840
120	10	HT12010	15.5	19.8	2.15	26	26	12	27	911-00841
	12	HT12012	15.5	19.8	2.15	26	28	12	28	911-00842
	16	HT12016	15.5	19.8	2.15	26	32	14	30	911-00843
	20	HT12020	15.5	19.8	2.15	26	36	16	32	911-00844
150	10	HT15010	17	22	2.5	27	31	12	31	911-00845
	12	HT15012	17	22	2.5	27	33	16	32	911-00846
	16	HT15016	17	22	2.5	27	35	16	32	911-00847
	20	HT15020	17	22	2.5	27	36	16	32	911-00848
185	10	HT18510	19	24.4	2.7	29	29	13	34	911-00849
	12	HT18512	19	24.4	2.7	29	31	16	34	911-00850
	16	HT18516	19	24.4	2.7	29	34	16	36	911-00851
	20	HT18520	19	24.4	2.7	29	40	19	36	911-00852
240	10	HT24010	21.5	27.7	3.1	33	38	16	40	911-00853
	12	HT24012	21.5	27.7	3.1	33	38	16	911-00854	
	16	HT24016	21.5	27.7	3.1	33	38	16	911-00855	

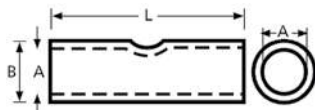
Voltage range: up to 1000V.

All dimensions in mm. Subject to technical changes.

## Recommended Tools

Type	Image	Description	Crimping Range (mm <sup>2</sup> )	Article-No.
HD06120AU		Hex Crimper (Super Range)	6,10, 16, 25, 35, 50, 70, 95, 120	991-02250
HYCP185KT		Hand Hydraulic Crimper	10, 16, 25, 35, 50, 70, 95, 120, 150, 185	911-00253

### HT Heavy Duty Ferrules



Type	Cable Size (mm <sup>2</sup> )	A (IØ)	B (OØ)	L (Length)	Article-No.
HT1F	1.5	1.9	3.8	12	911-00856
HT2F	2.5	2.4	3.9	15	911-00857
HT4F	4	2.8	4.7	15	911-00858
HT6F	6	3.4	5.3	15	911-00859
HT10F	10	4.4	6.3	22	911-00860
HT16F	16	5.5	7.6	22	911-00861
HT25F	25	6.9	9	24	911-00862
HT35F	35	8.2	10.7	27	911-00863
HT50F	50	10	12.8	30	911-00864
HT70F	70	11.7	15	34	911-00865
HT95F	95	13.5	17.4	38	911-00866
HT120F	120	15.5	19.8	42	911-00867
HT150F	150	17	22	48	911-00868
HT185F	185	19	24.4	53	911-00869
HT240F	240	21.5	27.7	60	911-00870

Voltage range: up to 1000V.

All dimensions in mm. Subject to technical changes.

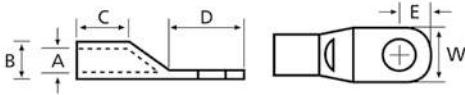
### Recommended Tools

Type	Image	Description	Crimping Range (mm <sup>2</sup> )	Article-No.
HD25150AU		Hex Crimper	25, 35, 50, 70, 95, 120, 150	991-00252
HYCP240KT		Hand Hydraulic Crimper	10, 16, 25, 35, 50, 70, 95, 120, 150, 185	911-00255

## HTB Standard Lugs

## Approvals:

- Mark scheme permit available on request



Cable Size (mm <sup>2</sup> )	Stud	Type	Barrel				Spade				Article-No.
			A (IØ)	B (OØ)	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	911-00871	
	4	HTB14	1.8	3.7	0.95	5	9	4	8	911-00872	
	5	HTB15	1.8	3.7	0.95	5	9	4	8	911-00873	
	6	HTB16	1.8	3.7	0.95	7	9	4	8	911-00874	
2.5	3	HTB23	2.4	4	0.8	7	11	5	8	911-00875	
	4	HTB24	2.4	4	0.8	7	11	5	8	911-00876	
	5	HTB25	2.4	4	0.8	7	11	5	10	911-00877	
	6	HTB26	2.4	4	0.8	8	11	5	10	911-00878	
	8	HTB28	2.4	4.3	0.95	7	15	8	12	911-00879	
4	3	HTB43	3.1	4.8	0.85	7	11	5	10	911-00880	
	4	HTB44	3.1	4.8	0.85	7	11	5	10	911-00881	
	5	HTB45	3.1	4.8	0.85	8	11	5	10	911-00882	
	6	HTB46	3.1	4.8	0.85	11	11	5	10	911-00883	
	8	HTB48	3.1	4.9	0.9	9	17	7	13	911-00884	
	10	HTB410	3.1	4.9	0.9	9	19	8	14	911-00885	
6	4	HTB64	3.4	5.1	0.85	9	11	5	10	911-00886	
	5	HTB65	3.4	5.1	0.85	9	11	5	10	911-00887	
	6	HTB66	3.4	5.1	0.85	11	15	6	12	911-00888	
	8	HTB68	3.4	5.1	0.85	9	15	6	12	911-00889	
	10	HTB610	3.4	5.6	1.1	11	20	8	15	911-00890	
10	5	HTB105	4.5	6.2	0.85	11	13	6	12	911-00891	
	6	HTB106	4.5	6.2	0.85	11	13	6	12	911-00892	
	8	HTB108	4.5	6.2	0.85	12	15	6	12	911-00893	
	10	HTB1010	4.5	6.6	1.05	12	19	8	15	911-00894	
	12	HTB1012	4.5	6.6	1.05	12	20	10	19	911-00895	
16	5	HTB165	5.5	7.2	0.85	12	14	7	12	911-01890	
	6	HTB166	5.5	7.2	0.85	12	14	7	12	911-00897	
	8	HTB168	5.5	7.2	0.85	12	14	7	12	911-00898	
	10	HTB1610	5.5	7.6	1.05	12	20	8	15	911-00899	
	12	HTB1612	5.5	7.6	1.05	12	25	11	18	911-00900	
	16	HTB1616	5.5	7.6	1.05	12	27	13	24	911-00901	
25	6	HTB256	6.9	8.9	1	12	14	7	13	911-00902	
	8	HTB258	6.9	8.9	1	15	14	7	16	911-00903	
	10	HTB2510	6.9	8.9	1	15	21	10	18	911-00904	
	12	HTB2512	6.9	9.4	1.25	12	21	11	18	911-00905	
	16	HTB2516	6.9	9.4	1.25	12	27	13	24	911-00906	
35	6	HTB356	8.2	10.6	1.2	12	18	9	15	911-00907	
	8	HTB358	8.2	10.6	1.2	12	18	9	15	911-00908	
	10	HTB3510	8.2	10.6	1.2	16	21	10	18	911-00909	
	12	HTB3512	8.2	10.6	1.2	16	21	10	18	911-00910	
	16	HTB3516	8.2	11.2	1.5	16	30	13	24	911-00911	
50	6	HTB506	10	12.9	1.45	16	21	10	18	911-00912	
	8	HTB508	10	12.9	1.45	16	21	10	18	911-00913	
	10	HTB5010	10	12.9	1.45	16	21	10	20	911-00914	
	12	HTB5012	10	12.9	1.45	16	21	10	20	911-00915	
	16	HTB5016	10	12.9	1.45	16	21	13	26	911-00916	
	20	HTB5020	10	12.9	1.45	16	21	13	26	911-00917	

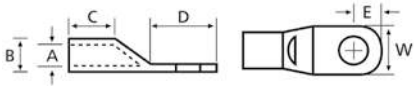
Voltage range: up to 1000V.



### HTB Standard Lugs

#### Approvals:

- Mark scheme permit available on request



Cable Size (mm <sup>2</sup> )	Stud	Type	Barrel				Spade			Article-No.
			A (IØ)	B (OØ)	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	911-00918
	8	HTB708	11.7	15.2	1.75	18	25	12	21	911-00919
	10	HTB7010	11.7	15.2	1.75	18	25	12	21	911-00920
	12	HTB7012	11.7	15.2	1.75	18	32	14	28	911-00921
	16	HTB7016	11.7	15.2	1.75	18	34	15	30	911-00922
	20	HTB7020	11.7	15.2	1.75	18	34	15	30	911-00923
95	8	HTB958	13.5	17.4	1.95	20	26	13	25	911-00925
	10	HTB9510	13.5	17.4	1.95	20	26	13	25	911-00926
	12	HTB9512	13.5	17.4	1.95	20	26	13	25	911-00927
	16	HTB9516	13.5	17.4	1.95	23	32	14	28	911-00928
	20	HTB9520	13.5	17.4	1.95	23	36	16	30	911-00929
120	8	HTB1208	15.5	19.8	2.15	22	28	14	28	911-00930
	10	HTB12010	15.5	19.8	2.15	22	28	14	28	911-00931
	12	HTB12012	15.5	19.8	2.15	22	28	14	28	911-00932
	16	HTB12016	15.5	19.8	2.15	22	32	16	28	911-00933
	20	HTB12020	15.5	19.8	2.15	22	36	16	32	911-00934
150	8	HTB1508	17	21.7	2.35	26	32	16	30	911-00935
	10	HTB15010	17	21.7	2.35	26	32	16	30	911-00936
	12	HTB15012	17	21.7	2.35	26	32	16	30	911-00937
	16	HTB15016	17	21.7	2.35	26	32	16	30	911-00938
	20	HTB15020	17	21.7	2.35	26	36	16	32	911-00939
185	10	HTB18510	18.5	23.5	2.5	32	34	17	34	911-00940
	12	HTB18512	18.5	23.5	2.5	32	34	17	34	911-00941
	16	HTB18516	18.5	23.5	2.5	32	34	17	34	911-00942
	20	HTB18520	18.5	23.5	2.5	29	40	19	36	911-00943
240	10	HTB24010	21.5	27	2.75	38	40	20	38	911-00944
	12	HTB24012	21.5	27	2.75	38	40	20	38	911-00945
	16	HTB24016	21.5	27	2.75	38	40	20	38	911-00946
	20	HTB24020	21.5	27	2.75	33	42	20	40	911-00947
300	10	HTB30010	24.5	31	3.25	42	44	22	43	911-00948
	12	HTB30012	24.5	31	3.25	42	44	22	43	911-00949
	16	HTB30016	24.5	31	3.25	42	44	22	43	911-00950
	20	HTB30020	24.5	31	3.25	35	45	18	45	911-00951
400	Blank	HTB400	28.5	36.5	4	44	52	Blank	50	911-00952
500	Blank	HTB500	31.5	40.5	4.5	48	56	Blank	56	911-00953
630	Blank	HTB630	35	45	5	56	66	Blank	65	911-00954

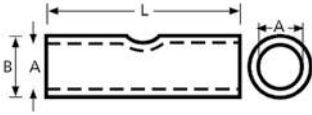
Voltage range: up to 1000V.

All dimensions in mm. Subject to technical changes.

### HTB Standard Ferrules

#### Approvals:

- Mark scheme permit available on request



Type	Cable Size (mm <sup>2</sup> )	A (IØ)	B (OØ)	L (Length)	Article-No.
HTB1F	1.5	1.8	3.7	12	911-00955
HTB2F	2.5	2.4	4	15	911-00956
HTB4F	4	3.1	4.8	15	911-00957
HTB6F	6	3.4	5.1	15	911-00958
HTB10F	10	4.5	6.2	22	911-00959
HTB16F	16	5.5	7.2	22	911-00960
HTB25F	25	6.9	8.9	24	911-00961
HTB35F	35	8.2	10.6	27	911-00962
HTB50F	50	10	12.9	30	911-00963
HTB70F	70	11.7	15.2	34	911-00964
HTB95F	95	13.5	17.4	38	911-00965
HTB120F	120	15.5	19.8	42	911-00966
HTB150F	150	17	21.7	48	911-00967
HTB185F	185	18.5	23.5	53	911-00968
HTB240F	240	21.5	27	60	911-00969
HTB300F	300	24.5	31	67	911-00970
HTB400F	400	28.5	36.5	80	911-00971
HTB500F	500	31.5	40.5	90	911-02008
HTB630F	630	35	49	110	911-01891

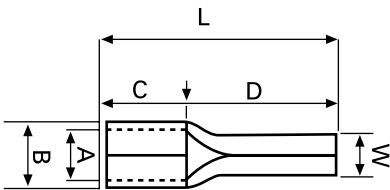
Voltage range: up to 1000V.

All dimensions in mm. Subject to technical changes.

#### Recommended Tools

Type	Image	Description	Crimping Range (mm <sup>2</sup> )	Article-No.
HYCP400KT		Hand Hydraulic Crimper	10, 16, 25, 35, 50, 70, 95, 120, 150, 185, 240, 300, 400	991-00259
HD06120AU		Hex Crimper	6, 10, 16, 25, 35, 50, 70, 95, 120	911-00250

### HT Pin Terminals



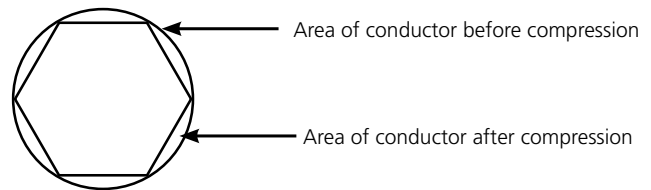
Type	Size	A	B	C	D	L	W
HTPTNB513	6	3.4	5.6	6	14	20	2.8
HTPTNB1012	10	4.5	6.9	8	14	22	4.3
HTPTNB1613	16	5.8	8.4	10	16	26	5.5
HTPTNB2515	25	7	9.5	13.5	20	33.5	6.8
HTPTNB3520	35	8.4	11.8	16	24.5	40.5	8
HTPTNB5020	50	9.6	13.6	19	26	45	9.5
HTPTNB7025	70	11.4	15.8	24	31	55	11
HTPTNB9525	95	13.5	18.9	24	31	55	12.5

Voltage range: up to 1000V.

All dimensions in mm. Subject to technical changes.

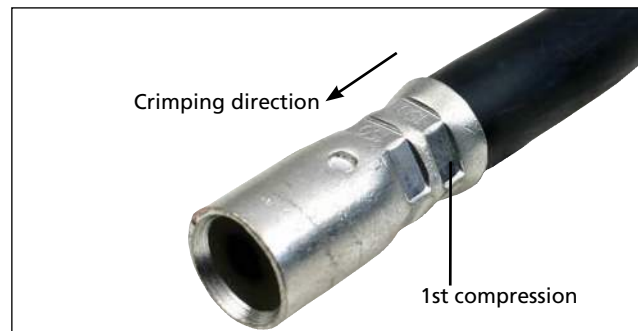
### Crimping Tips

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
- Observe the crimping direction (see pic right), crimp the cable lug or ferrule using the appropriate crimping tool



### Recommended Tools

Type	Image	Description	Crimping Range (mm <sup>2</sup> )	Article-No.
HYCP400HE		Hydraulic Crimp Head	16 - 400	991-00257
HD0650AU		Hex Crimper	6, 10, 16, 25, 35, 50	911-00251



## Inspired by Needs

**7.0 Appendix**

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**Abbreviations: Product Material**

Abbreviation*	Material
1203	Type 1203, Polyester (PET), silver matt (SR), tamper-proof
1220	Type 1220, Polyester (PET), white (WH)
1221	Type 1221, Polyester (PET), silver (SR)
ABS	Acrylonitrile Butadiene Styrene
AL	Aluminium
AL;CR	Aluminium-alloy; Chloroprene
AL;ST	Aluminium; Steel
CR	Chloroprene
E/TFE	Ethylene Tetrafluoroethylene
EP	Epoxy resins
EPR	Ethylene Propylene Rubber
EVA	Ethylenevinylacetate
FPMX	Fluoropolymer cross-linked
GS	Galvanised Steel
GS;PVC	Galvanised Steel; Polyvinylchloride
Metal	Metal
NR	Natural Rubber
PA	Polyamide
PA46	Polyamide 4.6
PA6	Polyamide 6
PA66	Polyamide 6.6
PA66, PP	Polyamide 6.6; Polypropylene
PA66GF13	Polyamide 6.6, glass-fibre reinforced
PA66GF15	Polyamide 6.6, glass-fibre reinforced
PA66HIR	Polyamide 6.6, high impact modified
PA66HIR(S)	Polyamide 6.6, high impact modified, blackscan
PA66HIRHS	Polyamide 6.6, high impact modified, heat stabilised
PA66HIRHS	Polyamide 6.6, high impact modified, heat stabilised
PA66HIRHSUV	Polyamide 6.6, high impact modified, heat and UV stabilised
PA66HIRHSW	Polyamide 6.6, high impact modified, heat and UV stabilised
PA66HS	Polyamide 6.6, heat stabilised
PA66HS	Polyamide 6.6, heat stabilised
PA66HS, POM	Polyamide 6.6, heat stabilised; Polyacetal
PA66HS, PP	Polyamide 6.6, heat stabilised; Polypropylene
PA66HSUV	Polyamide 6.6, heat and UV stabilised
PA66HSW	Polyamide 6.6, heat and UV stabilised
PA66MP	Polyamide 6.6, with metal particles
PA66MP+	Polyamide 6.6, with metal particles
PA66V0	Polyamide 6.6 V0
PA66W	Polyamide 6.6, UV-resistant




PA6-FR	Polyamide 6, flame retardant
PA6GF30	Polyamide 6, glass-fibre reinforced
PA6HIR	Polyamide 6, high impact modified
PA6HIRHS	Polyamide 6, high impact modified, heat stabilised
PA6V0	Polyamide 6 V0
PBT	Polyester (PBT)
PC	Polycarbonate
PE, SS	Polyethylene, Stainless Steel
PEEK	Polyetheretherketone
PE-FR	Polyethylene, flame retardant
PET	Polyester Film
PEUV	Polyethylene, UV-resistant
PL	Plastic
PM	Elastomer (PM)
PMMA	Acrylic Glass
PO	Polyolefin Compound unlinked
POA	Elastomer, cross-linked
POM	Polyacetal
PO-X	Polyolefin, chemically cross linked
PP	Polypropylene (PP)
PP, SS	Polypropylene, Stainless Steel
PPMP	Polypropylene with metal particles
PPMP+	Polypropylene with metal particles
PTFE	Polytetrafluoroethylene
PUR	Polyurethane
PUR DS	Polyurethane resin DS
PVC	Polyvinylchloride
PVC, ST	Flexible Polyvinyl Chloride, cadmium free
PVC-FR	Polyvinylchloride, flame retardant
PVDF	Polyvinylidene Fluoride
PVDFX	Polyvinylidene Fluoride cross-linked
SI	Silicone
SP	Polyester
SS304	Stainless Steel
SS316	Stainless Steel
TNCU	Tin-plated copper (TNCU)
TPU	Thermoplastic Polyurethane (TPU)
V	Vinyl

\*According to EN ISO 1043 Part 1 and ISO 1629






















## Abbreviation: Colours

Abbreviation	Colour
BGE	Beige 
BK	Black 
BN	Brown 
BL	Blue 
CL	Clear 
GD	Gold 
GR	Green 
GRYE	Green Yellow 
GY	Grey 
LTB	Light Blue 
MGN	Mint Green 
MST	Mustard 
NT	Natural 
OG	Orange 
PK	Pink 
RD	Red 
RUS	Russet 
SR	Silver 
TT	Transparent 
VT	Violet 
WT	White 
YL	Yellow 

## Abbreviations: Compliance

















	Halogen Free
	Limited Fire Hazard
	Restriction of use of certain hazardous substances in electrical and electronic equipment

## Industry Symbols

















	Aerospace
	Automotive
	Chemical
	Defence
	Distribution
	Electrical Installation
	Electronic
	Events
	Food and Beverage
	Industrial Automation
	Life Sciences (Medical & Pharma)
	Marine
	Mining
	Offshore
	Panel Builder
	Petrochemical
	Rail
	Renewable Energy
	Shipbuilding
	Telecommunication
	Truck Heavy Equipment
	White Goods
	Wind Power
	Do-It-Yourself



















## Standards Overview

ABS	American Bureau of Shipping	USA	
ASN	AeroSpatiale Normalidation	France	
ASTM	ASTM International	USA	
BS	British Standard	Great Britain	
BV	Bureau Veritas	France	
CE	Conformité Européenne	Europe	
CEBEC	Comitée for electrotechnical Belgium European Community	Belgium	
CEN	Comité Européen de Normalisation	Europe	
CSA	Canadian Standards Association	Canada	
cUL	Canadian Underwriters Laboratories	Canada	
DAN	Deutsche Airbus Norm	Europe	
DEF STAN	Defence Standard	Great Britain	
DEMKO	Danske Elektriske Materialekontrol	Denmark	
DIN	Deutsches Institut für Normung	Germany	
DNV	Det Norske Veritas	Norway	
DNVGL	Det Norske Veritas + Germanischer Lloyd	Norway	

## Standards Overview

EN	European Normative	Europe	
ENEC	European Norms Electrical Certification	Europe	
E.R.D.F.	Electricité Réseau Distribution France	France	
FCC	Federal Communications Commission	USA	
FDA	U.S. Food and Drug Administration	USA	
FIMKO	Suomalainen testaus ja sertifiointiyhteisö	Finland	
GL	Germanischer Lloyd	Germany	
GS	Geprüfte Sicherheit	Europe	
HACCP	Hazard Analysis and Critical Control Points	International	
IEC	International Electrotechnical Commission	International	
JAR/FAR	Joint Aviation Regulations / Federal Aviation Regulations	Europe, USA	
JN	Particular Specification developed for Eurofighter Program		
KBA	Kraftfahrt-Bundesamt	Germany	
KEMA KEUR	KEMA Quality B.V.	The Netherlands	
LEA	Liste des Equivalences Approuvés	France	
LR	Lloyd's Register	Great Britain	

## Standards Overview

LUL	London Underground Tested	Great Britain	
MIL	Military Specification	USA	
MS	Military Standard	USA	
NASM	National Aerospace Standard, Metric	USA	
NEMKO	Norges Elektriske Materiekkontroll	Norway	
NF F	Norme Française Ferroviaire	France	
NSA	Norm Sud Aviation	France	
PAN	Panavia Aircraft GmbH	Germany	
SAE	Society of Automotive Engineers	USA	
SEMKO	Sveriges Elektriska Materiekkontroll	Sweden	
STD	Standard for Dassault	France	
UL	Underwriters Laboratories	USA	
UL Recognized	Underwriters Laboratories Recognized	USA	
UNI CEI	Ente Nazionale Italiano di Unificazione Comitato Elettrotecnico Italiano	Italy	
VDE	Verband der Elektrotechnik, Elektronik, Informationstechnik	Germany	
VG	Verteidigungsgerätenorm der Bundeswehr	Germany	

## Standards: HellermannTyton Cable Ties and Fixings

Material	Colour	Approvals	UL-File Number
<b>CTQM5</b>			
PA66	BK	UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	E65344
	NT		
<b>KR6/35</b>			
PA66	NT	RATP   NF EN 45545-2 HL3 R22, RATP   NF EN 45545-2 HL3 R23, DNV GL   IEC 62275:2006	
PA66W	BK	DNV GL   IEC 62275:2006	
<b>KR6G5</b>			
E/TFE	BL	UL   ANSI/UL 1565, UL   ANSI/UL 62275	E64962
<b>KR8/21</b>			
PA66	NT	RATP   NF EN 45545-2 HL3 R23, RATP   NF EN 45545-2 HL3 R22, DNV GL   IEC 62275:2006	
PA66W	BK	DNV GL   IEC 62275:2006	
<b>KR8/33</b>			
PA66	NT	RATP   NF EN 45545-2 HL3 R23, RATP   NF EN 45545-2 HL3 R22, DNV GL   IEC 62275:2006	
PA66W	BK	DNV GL   IEC 62275:2006	
<b>KR8G5</b>			
E/TFE	BL	UL   ANSI/UL 1565, UL   ANSI/UL 62275	E64962
<b>LFPC103</b>			
PO	BK	DEF STAN 61-12	
<b>LFPC129</b>			
PO	BK	DEF STAN 61-12	
<b>LFPC132</b>			
PO	BK	DEF STAN 61-12	
<b>LFPC150</b>			
PO	BK	DEF STAN 61-12	
<b>LFPC163</b>			
PO	BK	DEF STAN 61-12	
<b>LFPC70</b>			
PO	BK	DEF STAN 61-12	
<b>LFPC83</b>			
PO	BK	DEF STAN 61-12	
<b>LK2</b>			
PA66	NT	DNV GL   IEC 62275:2006, Bureau Veritas   IEC 60092 series	
<b>LK2A</b>			
PA66	BK	DNV GL   IEC 62275:2006, Bureau Veritas   IEC 60092 series	
	NT		
PA66HIR(S)	BK	Bureau Veritas   IEC 60092 series	
PA66HS	NT	Bureau Veritas   IEC 60092 series, DNV GL   IEC 62275:2006	
PA66W	BK	DNV GL   IEC 62275:2006, Bureau Veritas   IEC 60092 series	
<b>LK5</b>			
PA66	BK	Bureau Veritas   IEC 60092 series	
	NT		
PA66HIR(S)	BK		
PA66HS	NT		
PA66W	BK	DNV GL   IEC 62275:2006	

Material	Colour	Approvals	UL-File Number
<b>LPH175</b>			
PA66	BK	DNV GL   IEC 62275:2006, Bureau Veritas   IEC 60092 series	
<b>LPH275</b>			
PA66HIR(S)	BK	Bureau Veritas   IEC 60092 series	
<b>LPH350</b>			
PA66HIR(S)	BK	Bureau Veritas   IEC 60092 series	
<b>MBT14H</b>			
SS316	ML	Bureau Veritas   IEC 60092, DNV GL   IEC 62275:2006, ABS   IEC 62275:2006	
<b>MBT14S</b>			
SS316	ML	IEC 62275, Bureau Veritas   IEC 60092, ABS   IEC 62275:2006, DNV GL   IEC 62275:2006	
<b>MBT14XH</b>			
SS316	ML	ABS, GL, IEC 62275, Bureau Veritas   IEC 60092	
<b>MBT20H</b>			
SS316	ML	IEC 62275, Bureau Veritas   IEC 60092, ABS   IEC 62275:2006, DNV GL   IEC 62275:2006	
<b>MBT20S</b>			
SS316	ML	Bureau Veritas   IEC 60092, ABS   IEC 62275:2006, DNV GL   IEC 62275:2006	
<b>MBT20XH</b>			
SS316	ML	Bureau Veritas   IEC 60092	
<b>MBT27H</b>			
SS316	ML	Det Norske Veritas, ABS, GL, IEC 62275, Bureau Veritas   IEC 60092	
<b>MBT27S</b>			
SS316	ML	Det Norske Veritas, ABS, GL, IEC 62275, Bureau Veritas   IEC 60092	
<b>MBT27XH</b>			
SS316	ML	Bureau Veritas   IEC 60092	
<b>MBT33H</b>			
SS316	ML	Det Norske Veritas, ABS, GL, IEC 62275, Bureau Veritas   IEC 60092	
<b>MBT33S</b>			
SS316	ML	Det Norske Veritas, ABS, GL, IEC 62275, Bureau Veritas   IEC 60092	
<b>MBT33XH</b>			
SS316	ML	Bureau Veritas   IEC 60092	
<b>MBT5S</b>			
SS316	ML	ABS, DNV GL, IEC 62275, Bureau Veritas   IEC 60092	
<b>MBT8H</b>			
SS316	ML	Det Norske Veritas, ABS, GL, IEC 62275	
<b>MBT8S</b>			
SS316	ML	Det Norske Veritas, ABS, GL, IEC 62275, Bureau Veritas   IEC 60092	
<b>MP4M3</b>			
PA66	NT	UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	E64963
<b>MSMP5/10</b>			
PA66	NT	UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	E64139
<b>MSMP6/6</b>			
PA66	NT	UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	E64139

**Standards: HellermannTyton Cable Ties and Fixings**

Material	Colour	Approvals	UL-File Number
<b>MST200S</b>			
SS304	ML	Det Norske Veritas, IEC 62275	
<b>MST360S</b>			
SS304	ML	Det Norske Veritas, IEC 62275	
<b>MST500S</b>			
SS304	ML	Det Norske Veritas, IEC 62275	
<b>MST700S</b>			
SS304	ML	Det Norske Veritas, IEC 62275	
<b>PE180</b>			
PA66HSW	BK	Bureau Veritas   IEC 60092 series	
<b>PE400</b>			
PA66	BL	Bureau Veritas   IEC 60092 series	
	GN		
	RD		
	YL		
<b>PE530</b>			
PA66HSW	BK	Bureau Veritas   IEC 60092 series	
<b>PT220</b>			
PEEK	BGE	VDE, DNV GL   EN 62275:2009	
<b>PT2A</b>			
PEEK	BGE	VDE, DNV GL   EN 62275:2009	
<b>Q120I</b>			
PA66	BK	UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	E65344
	BL		
	GN		
	NT		
	RD		
PA66HS	BK		
	NT		
<b>Q120M</b>			
PA66	BK	UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	E65344
	BL		
	GN		
	NT		
	RD		
PA66HS	BK		
	NT		
<b>Q120R</b>			
PA66	BK	UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	E65344
	BL		
	GN		
	NT		
	RD		
PA66HS	BK		
	NT		

Material	Colour	Approvals	UL-File Number
<b>Q18I</b>			
PA66	BK	UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	E65344
	BL		
	GN		
	NT		
PA66HS	RD		
	BK		
<b>Q18L</b>			
PA66	BK	UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	E65344
	BL		
	GN		
	NT		
	RD		
PA66HS	BK		
	NT		
<b>Q18R</b>			
PA66	BK	UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	E65344
	BL		
	GN		
	NT		
PA66HS	RD		
	BK		
<b>Q30L</b>			
PA66	BK	UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	E65344
	BL		
	GN		
	NT		
PA66HS	RD	UL   ANSI/UL 62275	
	BK	UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	
<b>Q30LR</b>			
PA66	GN	UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	E65344
<b>Q30R</b>			
PA66	BK	UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	E65344
	BL		
	GN		
	NT		
	RD		
PA66HS	BK		
	NT		
<b>Q50L</b>			
PA66	BK	UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	E65344
	BL		
	GN		
	NT		
PA66HS	RD		
	BK		
<b>Q50R</b>			
PA66HS	NT		
	BK		



All approvals, standards or specifications included in the General Catalogue 2019 at the time of printing, January 2019 are correct. Please consult our website [www.HellermannTyton.co.za](http://www.HellermannTyton.co.za) for further updates.

## Standards: HellermannTyton Cable Ties and Fixings

Material	Colour	Approvals	UL-File Number
<b>Q50R</b>			
PA66	NT	UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	E65344
<b>QM20</b>			
PA66	BK	UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	E65344
	NT		
<b>REL100</b>			
PA66	BK	UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	E64963
<b>REL140</b>			
PA66	BK	UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	E64963
<b>REL170</b>			
PA66HIR	BK	UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	E64963
<b>RELK21</b>			
PA66	BK	Bureau Veritas   IEC 60092 series	
	NT		
<b>RELK2L</b>			
PA66	BK	Bureau Veritas   IEC 60092 series, DNV GL   IEC 62275:2006	E64963
	NT	DNV GL   IEC 62275:2006, Bureau Veritas   IEC 60092 series	
<b>RELK2M</b>			
PA66	BK	DNV GL   IEC 62275:2006, Bureau Veritas   IEC 60092 series	E64963
	NT		
<b>RELK2R</b>			
PA66	NT	BV, DNV GL   IEC 62275:2006	E64963
<b>RLT120</b>			
PA66	BK	Bureau Veritas   IEC 60092 series	
	NT	Bureau Veritas   IEC 60092 series, DNV GL   IEC 62275:2006	
<b>RLT150</b>			
PA66	BK	Bureau Veritas   IEC 60092 series	E64963
	NT	DNV GL   IEC 62275:2006, UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B, Bureau Veritas   IEC 60092 series	
PA66HS		Bureau Veritas   IEC 60092 series	
PA66W	BK	DNV GL   IEC 62275:2006	
<b>RT250M</b>			
PA66	BK	Bureau Veritas   IEC 60092 series, DNV GL   IEC 62275:2006, UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	E64139
	NT	UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B, DNV GL   IEC 62275:2006	
PA66W	BK	UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	
<b>RT250XL</b>			
PA66	BK	UL   ANSI/UL 746B, UL   ANSI/UL 1565, UL   ANSI/UL 62275, DNV GL   IEC 62275:2006	E64139
	NT	DNV GL   IEC 62275:2006, UL   ANSI/UL 746B, UL   ANSI/UL 1565, UL   ANSI/UL 62275	
<b>T120I</b>			
PA66	BK	BV 03856/H0 BV, DNV GL   IEC 62275:2006	
	NT		
PA66HIR(S)	BK	BV 03856/H0 BV	
PA66W	BK	DNV GL   IEC 62275:2006	

Material	Colour	Approvals	UL-File Number
<b>T120L</b>			
PA66	BK	BV 03856/H0 BV, DNV GL   IEC 62275:2006	
	NT	GL 86 137-81 HH, BV 03856/H0 BV, DNV GL   IEC 62275:2006	
PA66HIR(S)	BK	BV 03856/H0 BV	
PA66HS	NT	DNV GL   IEC 62275:2006, Bureau Veritas   IEC 60092 series	
PA66W	BK	DNV GL   IEC 62275:2006	
<b>T120R</b>			
E/TFE	BL	UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B, DNV GL   IEC 62275:2006	E193818
<b>T120R(E)</b>			
PA46	NT	BV 03856/H0 BV	
PA66	BK	BV 03856/H0 BV, Det Norske Veritas, UL   ANSI/UL 746B, UL   ANSI/UL 1565, UL   ANSI/UL 62275	E64963
	GN	BV 03856/H0 BV, DNV GL   IEC 62275:2006	
	NT	BV 03856/H0 BV, UL   ANSI/UL 746B, UL   ANSI/UL 1565, UL   ANSI/UL 62275, DNV GL   IEC 62275:2006	E64963
	RD	BV 03856/H0 BV, Det Norske Veritas	
PA66HIR(S)	BK	BV 03856/H0 BV	
PA66HS	NT		
PA66V0	WT	BV 03856/H0 BV, RST LAB   DIN EN 45545-2 HL2 R22, RST LAB   DIN EN 45545-2 HL3 R23	
PA66W	BK	BV 03856/H0 BV, DNV GL   IEC 62275:2006, UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	E64963
<b>T120ROS</b>			
PA66V0	WT	RST LAB   DIN EN 45545-2 HL2 R22, RST LAB   DIN EN 45545-2 HL3 R23	
<b>T120S</b>			
PA66	NT	BV 03856/H0 BV, UL   ANSI/UL 746B, UL   ANSI/UL 1565, UL   ANSI/UL 62275, DNV GL   IEC 62275:2006	E64963
PA66HS	BK	BV 03856/H0 BV, UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	
	NT	BV 03856/H0 BV, DNV GL   IEC 62275:2006, UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	
PA66W	BK	DNV GL   IEC 62275:2006	
<b>T150L</b>			
PA66	BK	MIL 53421, UL   ANSI/UL 746B, UL   ANSI/UL 1565, UL   ANSI/UL 62275	E64139
	NT	MIL 53421, DNV GL, UL   ANSI/UL 746B, UL   ANSI/UL 1565, UL   ANSI/UL 62275	
PA66HS	BK	MIL 53421, UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	
PA66W	BK	DNV GL   IEC 62275:2006	

**Standards: HellermannTyton Cable Ties and Fixings**

Material	Colour	Approvals	UL-File Number
<b>T150R</b>			
PA66	BK	UL   ANSI/UL 746B, UL   ANSI/UL 1565, UL   ANSI/UL 62275	E85319
	NT	UL   ANSI/UL 746B, UL   ANSI/UL 1565, UL   ANSI/UL 62275, DNV GL   IEC 62275:2006	
<b>T150R(H)</b>			
PA66	BL	UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	E85319
	RD		
	YL		
PA66HS	BK	VG U48/04101, UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	E85319
	NT		
PA66W	BK	DNV GL   IEC 62275:2006, UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	
<b>T18I</b>			
PA66	BK	UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	E85319
	NT	DNV GL   IEC 62275:2006, UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	
PA66HS	BK	UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	E85319
	NT	DNV GL   IEC 62275:2006, UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	
PA66W	BK	DNV GL   IEC 62275:2006, UL   ANSI/UL 62275, UL   ANSI/UL 1565	
<b>T18L</b>			
PA66	BK	UL   ANSI/UL 746B, UL   ANSI/UL 1565, UL   ANSI/UL 62275	E85319
	NT	UL   ANSI/UL 1565, UL   ANSI/UL 62275, UL   ANSI/UL 746B, DNV GL   IEC 62275:2006	
PA66HS	BK	DNV GL   IEC 62275:2006, UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	E85319
	NT	UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B, DNV GL   IEC 62275:2006	
PA66V0	WT	BV 03856/H0 BV	
PA66W	BK	DNV GL   IEC 62275:2006	

Material	Colour	Approvals	UL-File Number
<b>T18R</b>			
E/TFE	BL	UL   ANSI/UL 1565, UL   ANSI/UL 62275, DNV GL   IEC 62275:2006	E304723
PA11		BV 03856/H0 BV	
	BK	UL   ANSI/UL 746B, UL   ANSI/UL 1565, UL   ANSI/UL 62275, DNV GL   IEC 62275:2006	E85319
PA66	BL	UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B, DNV GL   IEC 62275:2006	E85319
	GN	UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B, DNV GL   IEC 62275:2006	E85319
	NT	UL   ANSI/UL 746B, UL   ANSI/UL 1565, UL   ANSI/UL 62275, DNV GL   IEC 62275:2006	
	RD	UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B, DNV GL   IEC 62275:2006	
PA66HS	BK	DNV GL   IEC 62275:2006, UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	E85319
	NT	STD78750, Bundesamt für Wehrtechnik   VG 95387 Teil 2 Ausgabe: 2008-12, Bundesamt für Wehrtechnik   VG 95387 Teil 4 Ausgabe: 2008-12, DNV GL   IEC 62275:2006, UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	
PA66V0	WT	BV 03856/H0 BV, RST LAB   DIN EN 45545-2 HL3 R23, RST LAB   DIN EN 45545-2 HL2 R22	
PA66W	BK	DNV GL   IEC 62275:2006	
<b>T18ROS</b>			
PA66V0	WT	RST LAB   DIN EN 45545-2 HL3 R23, RST LAB   DIN EN 45545-2 HL2 R22	
<b>T18S</b>			
PA66	NT	UL   ANSI/UL 746B, UL   ANSI/UL 1565, UL   ANSI/UL 62275, DNV GL   IEC 62275:2006	E85319
<b>T250I</b>			
PA66	NT	UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	E64139
<b>T250L</b>			
PA66	BK	UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	E64139
<b>T250R</b>			
PA66	NT	UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	E64139
PA66HIRHSUV	BK	UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	E64139
<b>T250S</b>			
PA66	NT	BV 03856/H0 BV	
<b>T250X</b>			
PA66	BK	BV 03856/H0 BV	
<b>T25L</b>			
PA66	NT	DNV GL   IEC 62275:2006	



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## Standards: HellermannTyton Cable Ties and Fixings

Material	Colour	Approvals	UL-File Number
<b>T30L</b>			
PA66	BK	UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	E64963
	NT	DNV GL   IEC 62275:2006, UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	
PA66HS	BK	UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	E85319
	NT	BV 03856/H0 BV, UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	E64963
PA66W	BK	DNV GL   IEC 62275:2006	
<b>T30R</b>			
E/TFE	BL	UL   ANSI/UL 1565, UL   ANSI/UL 62275, DNV GL   IEC 62275:2006	E64962
PA11		BV 03856/H0 BV	
PA66	BK	UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	E85319
	BL	BV 03856/H0 BV	
	GN	BV 03856/H0 BV	
	NT	DNV GL   IEC 62275:2006, UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	E85319
	RD		
	YL	BV 03856/H0 BV	
PA66HS	BK		
	NT	STD78750, Bundesamt für Wehrtechnik   VG 95387 Teil 4 Ausgabe: 2008-12, Bundesamt für Wehrtechnik   VG 95387 Teil 2 Ausgabe: 2008-12, UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B, DNV GL   IEC 62275:2006	E85319
PA66V0	WT	BV 03856/H0 BV, RST LAB   DIN EN 45545-2 HL2 R22, RST LAB   DIN EN 45545-2 HL3 R23	
PA66W	BK	DNV GL   IEC 62275:2006	
<b>T40R</b>			
PA66	NT	BV 03856/H0 BV, UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B, DNV GL   IEC 62275:2006	E64963
PA66HS	BK	BV 03856/H0 BV, UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	
	NT	ANSI/UL 746B	
PA66W	BK	DNV GL   IEC 62275:2006	
<b>T50I</b>			
PA46	NT	BV 03856/H0 BV	
PA66	BK	BV 03856/G0 BV, BV 03856/H0 BV, Det Norske Veritas, UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	E64963
	NT	BV 03856/G0 BV, BV 03856/H0 BV, DNV GL   IEC 62275:2006, UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	

Material	Colour	Approvals	UL-File Number
PA66HIR(S)		BV 03856/H0 BV	
PA66HS	BK	BV 03856/H0 BV, UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	E85319
	NT	VG U48/04102, BV 03856/G0 BV, BV 03856/H0 BV	
PA66V0	WT	BV 03856/H0 BV, RST LAB   DIN EN 45545-2 HL2 R22, RST LAB   DIN EN 45545-2 HL3 R23	
PA66W	BK	DNV GL, IEC 62275	
<b>T50L</b>			
E/TFE	BL	UL   ANSI/UL 1565, UL   ANSI/UL 62275, DNV GL   IEC 62275:2006	E64962
PA66	BK	BV 03856/H0 BV, Det Norske Veritas, UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	E64963
	BL	BV 03856/H0 BV	
	GN	BV 03856/H0 BV	
	NT	DNV GL   IEC 62275:2006, UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B, Bureau Veritas   IEC 60092 series	E64963
	RD		
	YL	BV 03856/H0 BV	
PA66HIR(S)			
PA66HS	BK	Bundesamt für Wehrtechnik   VG 95387 Teil 4 Ausgabe: 2008-12, UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	E85319
	NT	BV 03856/H0 BV, DNV GL, Bundesamt für Wehrtechnik   VG 95387 Teil 4 Ausgabe: 2008-12, UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	E64963
PA66W	BK	DNV GL   IEC 62275:2006	
<b>T50R</b>			
E/TFE	BL	UL   ANSI/UL 1565, UL   ANSI/UL 62275, DNV GL   IEC 62275:2006	E64962
PA11	BK		
PA66	BL	BV 03856/H0 BV	
	GN	BV 03856/H0 BV	
	NT	BV 03856/H0 BV, DNV GL   IEC 62275:2006, CE   2011/65/EU [article 4], CE   2014/35/EU, UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	E64963
	RD		
	YL	BV 03856/H0 BV	
PA66HIR(S)			
PA66HS	BK		
PA66V0	WT	BV 03856/H0 BV, RST LAB   DIN EN 45545-2 HL2 R22, RST LAB   DIN EN 45545-2 HL3 R23	
PA66W	BK	DNV GL, IEC 62275	



**Standards: HellermannTyton Cable Ties and Fixings**

Material	Colour		UL-File Number
<b>T50RDH</b>			
PA46	GY	DNV GL   IEC 62275:2006	
PA66	NT	UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B	E64963
<b>T50S</b>			
PA11	BK	BV 03856/H0 BV	
PA66	NT	BV 03856/H0 BV, UL   ANSI/UL 62275, UL   ANSI/UL 1565, UL   ANSI/UL 746B, DNV GL   IEC 62275:2006, CE   2011/65/EU [article 4], CE   2014/35/EU	E64963
PA66HS	BK	BV 03856/H0 BV	
	NT	BV 03856/H0 BV, DNV GL   IEC 62275:2006	
PA66W	BK	DNV GL   IEC 62275:2006	
<b>T80I</b>			
PA66W	BK	DNV GL   IEC 62275:2006	
<b>T80L</b>			
PA66HS	BK	Bundesamt für Wehrtechnik   VG 95387 Teil 4 Ausgabe: 2008-12	
	NT	STD78750, Bundesamt für Wehrtechnik   VG 95387 Teil 4 Ausgabe: 2008-12	
PA66W	BK	DNV GL   IEC 62275:2006	
<b>T80R</b>			
PA66HS	NT	STD78750, Bundesamt für Wehrtechnik   VG 95387 Teil 4 Ausgabe: 2008-12, Bundesamt für Wehrtechnik   VG 95387 Teil 2 Ausgabe: 2008-12	
PA66W	BK	DNV GL   IEC 62275:2006	



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### Standards: HellermannTyton Heatshrink Tubing

Type	Specifications
EPS-300	SAE - AMS - DTL-23053/4
EPS-400	SAE - AMS - DTL-23053/4
HFT-A	ANSI/UL 224, ASN-E0126, CLASS 903201, CSA-C22.2 No.198.1-99, DEF STAN 59-97/3, LEA, MIL-DTL-23053/5C, NF F 00-608, NSA937211, SAE - AMS - DTL-23053/5C, UL 224, VG 95343-5:2006-06, VG 95343 T05 A 002 A, VG 95343 T05 A 002 C, VG 95343 T05 A 002 E, VG 95343 T05 A 002 G, VG 95343 T05 A 002 L, VG 95343 T05 A 003 A, VG 95343 T05 A 003 C
LVR	ANSI/UL 224
Viton®-E	LEA, VG 95343
TFE4	NSA 937210

Specifications apply to limited article numbers

### Standards: HellermannTyton Heat Shrinkable Moulded Shapes

Type	Specifications
1100 series 90 degree with Rib - VG	DAN341, DEF STAN 59-97/3, VG 95343-6:2009-12
1100 series 90 high ratio	DEF STAN 59-97/3, VG 95343-6:2009-12
1100 series 90 low profile with Rib	DEF STAN 59-97/3, VG 95343-6:2009-12
1200 series T offset - VG	DEF STAN 59-97/3, VG 95343-8:2016-03
1200 series T - VG	DEF STAN 59-97/3, VG 95343-8:2016-03
1300 series 45 angle (and 30) T - VG	JN1000T, VG 95343-8:2016-03
130 series Long Outlet with Rib	DEF STAN 59-97/3, VG 95343-6:2009-12
150 series Bottle with Rib - VG	DEF STAN 59-97/3, LEA, VG 95343-6:2009-12, VG 95343 T06 B 006 A
170 series Bottle with Rib	DEF STAN 59-97/3, VG 95343-6:2009-12
190 series Bottle with external Ribs	DEF STAN 59-97/3, VG 95343-6:2009-12
200 series 2-way Outlet - VG	DEF STAN 59-97/3, JN1000T, VG 95343-8:2016-03
300 series 3-way Outlet - VG	DEF STAN 59-97/3, VG 95343-8:2016-03
400 series 4-way Outlet - VG	DEF STAN 59-97/3, VG 95343-8:2016-03
Epoxy adhesive VG 95343	VG 95343

Specifications apply to limited article numbers

### Standards: HellermannTyton Cable Protection

Type	Specifications	UL File NO
Braided Sleeving Helagaine HEGP	DIN EN 45545-2 (02/2016), DIN EN 45545-2 (08/2013)	
Self-Closing Sleeving Helagaine Twist-In-FR	CEN/TS 45545-2:2009-07, DIN EN 45545-2:2009, NF F 16-101, UL 1441	E197993

Specifications apply to limited article numbers

### Standards: HellermannTyton Wire Connectors – HelaCon Plus Mini

HCPM2	2006/65/EC, ANSI/UL 486-A, ANSI/UL 486-B, ANSI/UL 486-C, cULus, EN 60998-2-2:2004, EN 60998-2-2:201, ENEC
HCPM3	
HCPM4	
HCPM5	
HCPM6	
HCPM-8	

Specifications apply to limited article numbers

### Standards: HellermannTyton Non-Shrinkable Tubing

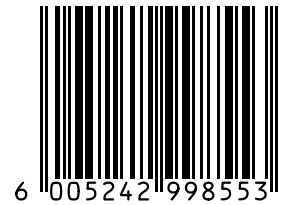
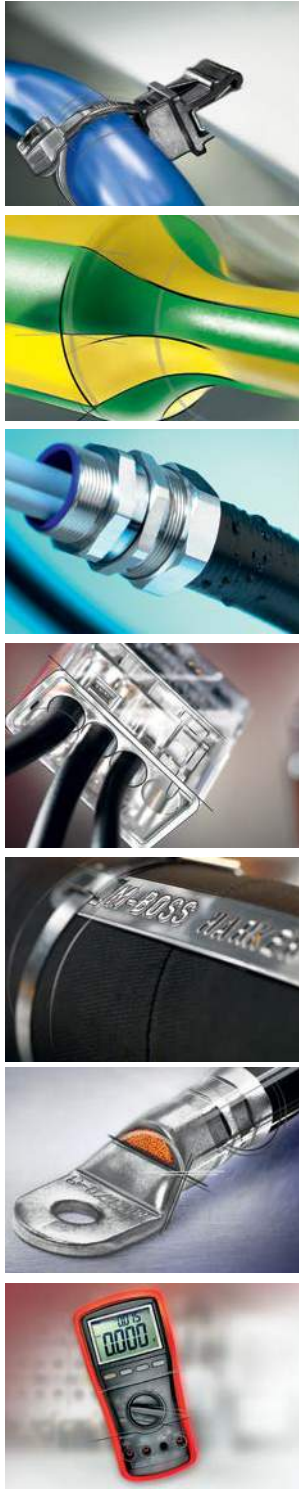
Type	Specifications
Helsyn H	BS-4G-198 Part 1 Type 1, DEF STAN 59-15 D2

Specifications apply to limited article numbers

### Standards: HellermannTyton Identification Systems

Type	Specifications
CRADLE RFID	Article 41 of Directive 2014/34/EU, EN 50303:2000, EN 60079-0:2012, EN 60079-11:2012
IT Ties	ANSI/UL 1565, ANSI/UL 62275, ANSI/UL 746B, CAGE Code 53421, CAN/CSA-C22.2 no. 62275
HEXTAG RFID PA66	Article 41 of Directive 2014/34/EU, EN 60079-0:2012, EN 60079-11:2012
M-BOSS Compact	2006/42/EG, EN 60204-1:2006, EN ISO 12100:2010
M-BOSS Compact Organiser	
MCTRFID Ties PA66MP	Article 41 of Directive 2014/34/EU, EN 50303:2000, EN 60079-0:2012, EN 60079-11:2012
RFID Nylon Ties	Article 41 of Directive 2014/34/EU, EN 50303:2000, EN 60079-0:2012, EN 60079-11:2012
TAGDR	MIL-STD-202G Method 215K, NF F 00-608 (12/1995), SAE - AS81531
TAGHT	MIL-STD-202G Method 215K, SAE - AS81531
TAGPU	MIL-STD-202G Method 215K, SAE - AS81531
TAGUL	SAE - AMS - DTL-23053/5 Class 1 and 3, SAE - AS81531, UL 224 125 °C 600V VW-1
TIPTAG Rail	EN 45545-2:2013
TLFX DS - 2:1	ASTM E 662, BS-6853:1999, BS-EN ISO 4589-2, DIN 53438-3: 1984, DIN 54837 (12/2007), DIN 5510-2, EN 45545-2:2013, EN ISO 11925-2: 2010, NF F 16-101, UNI CEI 11170-3
TULT DS - 3:1	ANSI/UL 224, MIL-STD-202G Method 215K
Thermal Transfer Ribbons Adhesive Labels	ANSI/UL 969
TrakMark DS	2004/108/EG, 2014/35/EU, ANSI/UL 60950-1, ANSI/UL 60950-21, ANSI/UL 60950-22, ANSI/UL 60950-23, EN 55022:2011-12, EN 55024:2011-09, EN 61000-3-2, EN 61000-3-3, EN 61000-6-2, FCC
TrakMark Accessories	CEN
TT430 Printer	ANSI/NFPA 70 article 645, ANSI/NFPA 75, ANSI/UL 60950-1, ANSI/UL 60950-21, ANSI/UL 60950-22, ANSI/UL 60950-23, CE 2014/35/EU, EN 55022:2011-12, EN 55024:2011-09, EN 61000-3-2, EN 61000-3-3, EN 61000-6-2, FCC eCFR 47 FCC part 15 - subpart B, limit class A, ICES-033:2004 Issue 4, limit class A
TT430 Accessories	CEN

Specifications apply to limited article numbers



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