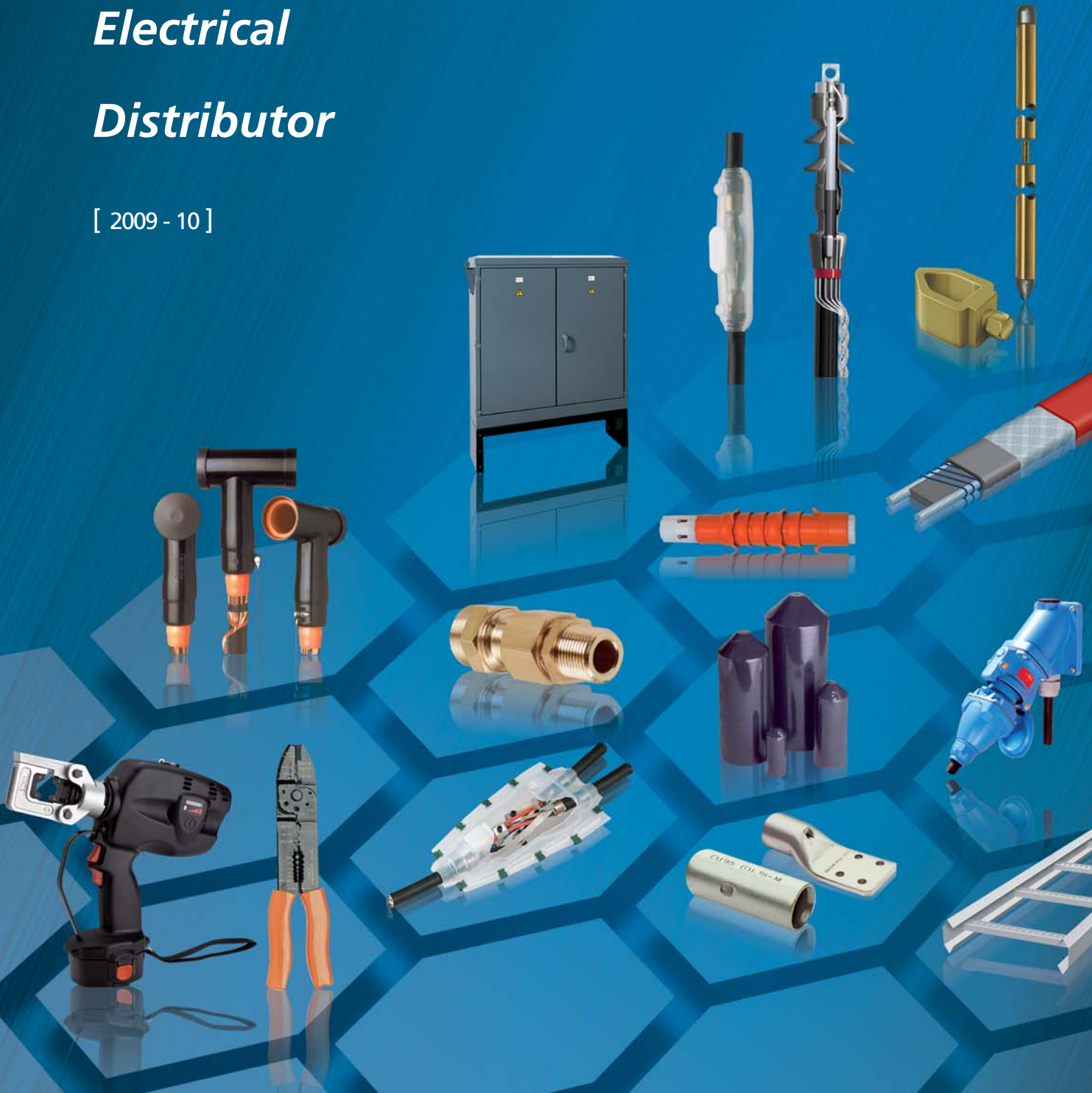




# CABLE SERVICES

*Specialist  
Electrical  
Distributor*

[ 2009 - 10 ]



Visit our web site at: [www.cableservices.co.uk](http://www.cableservices.co.uk)

## SPECIALISTS IN

-  **Cable Glanding & Termination**
-  **Crimping & Crimping Tools**
-  **Cable Fixing & Supports**
-  **Jointing & Terminating**
-  **Service Connection**
-  **Electric Trace Heating**
-  **Earthing & Lightning Protection**
-  **Cable - All Descriptions**
-  **Street Lighting Products**



RS 21752  
Cable Services  
RS 26602  
Smith Electrical

## Company History

Cable Services (North West) Ltd. was established in 1971 by the late Joe Williams, whose vision it was to form a business dedicated to giving customers unrivalled service on a finite range of cable and accessory products.

Today Cable Services majors in the products of only ten suppliers. All products are closely related and centre around cable and its immediate accessories. For example, Glanding, Terminating, Jointing and Cable Support, above and below ground, at voltages up to 72kV.

## Recent Developments / Catalogue Additions

Over the last ten years the Cable Services Group has increasingly been involved with contractors supporting the Electricity Supply Utilities (DNO's), and also the multi utility contractors providing connections in the rapidly expanding private networks sector. As such the stock carried by the Group has changed to reflect these developments, with large stocks of utility specific joints, house service cut outs, multi-way service boards, and heavy duty cut outs. The SERVICE CONNECTION section has been added to the catalogue to demonstrate our commitment to this important area of activity.

## Quality Policy

*'The Cable Services Group of Companies Quality Policy is to maintain, on a continuous basis, an effectively managed Quality Assurance Programme, designed to assure customers that materials conform to the laid down procedures of BS/EN/ISO 9000 and similar types of quality assurance specification.'*

*(Extracted from the Quality Manual of the Cable Services Group of Companies).*

## Loyalty & Service

We consider the relationship Cable Services has with its suppliers to be fundamental to our success. The supplier agreements have existed for many years, with great emphasis being placed on supplier loyalty, bringing tangible benefits in the high standard of service and competitive prices we offer to our customers.

One of the keys to our efficient delivery service is our bulk buying policy, serving the four companies in the Cable Services Group.

## Distributors For:





## **Cable Services On The Internet**

The Cable Services catalogue has been available on the internet for a number of years. This latest catalogue will be available as PDF files to enable you to download individual pages for your own use.

Visit us at [www.cableservices.co.uk](http://www.cableservices.co.uk). E-mailed enquiries and orders are also welcome - please see the e-mail addresses below and on the back cover of this catalogue.

## **Technical Support**

Full technical back up is available to our customers on all the products supplied by the group. Our limited integrated range, means that our sales personnel are exceptionally well informed and therefore able to assist customers with any enquiry. In the event of a question being beyond our experience, our long standing relationship with our suppliers means that their technical expertise is immediately available.

## **Our Locations**

Cable Services have four locations within the UK:

### **Cable Services Ltd (NW / UK / Export)**

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Rhosrobin,  
Wrexham LL11 4YZ.  
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Fax: 01978 311315  
Email: [sales@cableservices.co.uk](mailto:sales@cableservices.co.uk)

### **Central Ltd**

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Fax: 01785 825977  
Email [central@cableservices.co.uk](mailto:central@cableservices.co.uk)

### **Liverpool Ltd**

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Liverpool L20 8AZ.  
Tel: 0151 9339022  
Fax: 0151 9339765  
Email: [lpool@cableservices.co.uk](mailto:lpool@cableservices.co.uk)

### **Smith Electrical Ltd**

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Thornliebank Industrial Estate  
Glasgow G46 8JH.  
Tel: 0141 621 2060  
Fax: 0141 638 9996  
Email: [sales@smithelec.co.uk](mailto:sales@smithelec.co.uk)



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**Cable Lugs & Connectors** Page 5 - 11*Prysmian, Cembre and Tyco crimp and mechanical connectors.*

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**Cable Glands** Page 12 - 19*Prysmian cable glands, Raxton gland adaptors and reducers, Raychem cable feedthroughs.*

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**Cable Support** Page 20 - 27*Unistrut cable ladder, Unistrut metal framing systems, Prysmian cable cleats and Insuloid cable ties.*

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**Low Voltage Cable Jointing** Page 28 - 31*3M and Prysmian resin joints, Raychem heat shrink joints, 1kV to 3.3kV.*

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**Medium Voltage Cable Jointing** Page 42 - 47*Tyco Raychem and 3M jointing products up to 72kV.*

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**Heat Shrink** Page 48 - 49*Raychem heat shrink tubing and moulded parts.*

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**Useful Information** Page 111*Terms and conditions, branch location maps.*





# LV Compression Connectors

Uninsulated copper terminals LV rated (600/1000V)



Standard Cond Size mm <sup>2</sup>	Stud Size mm				
1.0	5	A03 - M5	(BT1C5)	L03 - M	(BT1CS)
1.5 - 2.5	5	A06 - M5	(BT2C5)	L06 - M	(BT2CS)
	6	A06 - M6	(BT2C6)		
	8	A06 - M8	(BT2C8)		
4.0 - 6.0	5	A1 - M5	(BT6C5)	L1 - M	(BT6CS)
	6	A1 - M6	(BT6C6)		
	8	A1 - M8	(BT6C8)		
	10	A1 - M10	(BT6C10)		
10	5	A2 - M5	(BT10C5)	L2 - M	(BT10CS)
	6	A2 - M6	(BT10C6)		
	8	A2 - M8	(BT10C8)		
	10	A2 - M10	(BT10C10)		
16	5	A3 - M5	(BT16C5)	L3 - M	(BT16CS)
	6	A3 - M6	(BT16C6)		
	8	A3 - M8	(BT16C8)		
	10	A3 - M10	(BT16C10)		
	12	A3 - M16	(BT16C16)		
25	6	A5 - M6	(BT25C6)	L5 - M	(BT25CS)
	8	A5 - M8	(BT25C8)		
	10	A5 - M10	(BT25C10)		
	12	A5 - M12	(BT25C12)		
35	6	A7 - M6	(BT35C6)	L7 - M	(BT35CS)
	8	A7 - M8	(BT35C8)		
	10	A7 - M10	(BT35C10)		
	12	A7 - M12	(BT35C12)		
50	6	A10 - M6	(BT50C6)	L10 - M	(BT50CS)
	8	A10 - M8	(BT50C8)		
	10	A10 - M10	(BT50C10)		
	12	A10 - M12	(BT50C12)		
70	6	A14 - M6	(BT70C6)	L14 - M	(BT70CS)
	8	A14 - M8	(BT70C8)		
	10	A14 - M10	(BT70C10)		
	12	A14 - M12	(BT70C12)		
	16	A14 - M16	(BT70C16)		
95	8	A19 - M8	(BT95C8)	L19 - M	(BT95CS)
	10	A19 - M10	(BT95C10)		
	12	A19 - M12	(BT95C12)		
	16	A19 - M14	(BT95C14)		
120	8	A24 - M8	(BT120C8)	L24 - M	(BT120CS)
	10	A24 - M10	(BT120C10)		
	12	A24 - M12	(BT120C12)		
	16	A24 - M16	(BT120C16)		
	20	A24 - M20	(BT120C20)		
150	10	A30 - M10	(BT150C10)	L30 - M	(BT150CS)
	12	A30 - M12	(BT150C12)		
	16	A30 - M16	(BT150C16)		
	PLAIN	A30 - M0(20)*	(BT150CU)		
185	10	A37 - M10	(BT185C10)	L37 - M	(BT185CS)
	12	A37 - M12	(BT185C12)		
	16	A37 - M16	(BT185C16)		
	20	A37 - M20	(BT185C20)		
	PLAIN	A37 - M0(20)*	(BT185CU)		
240	10	A48 - M10	(BT240C10)	L48 - M	(BT240CS)
	12	A48 - M12	(BT240C12)		
	16	A48 - M16	(BT240C16)		
	20	A48 - M20	(BT240C20)		
	PLAIN	A48 - M0(20)*	(BT240CU)		
300	12	A60 - M12	(BT300C12)	L60 - M	(BT300CS)
	16	A60 - M16	(BT300C16)		
	20	A60 - M20	(BT300C20)		
	PLAIN	A60 - M0(20)*	(BT300CU)		
400	12	A80 - M12	(BT400C12)	L80 - M	(BT400CS)
	16	A80 - M16	(BT400C16)		
	20	A80 - M20	(BT400C20)		
	PLAIN	A80 - M0(20)*	(BT400CU)		
500	16	A100 - M16	(BT500C16)	L100 - M	(BT500CS)
	20	A100 - M20	(BT500C20)		
	PLAIN	A100 - M0(20)*	(BT400CU)		
630	16	A120 - M16	(BT630C16)	L120 - M	(BT630CS)
	20	A120 - M20	(BT630C20)		
	PLAIN	A120 - M0(20)*	(BT630CU)		
800	20	A160 - M20	(BT800C20)	L160 - M	(BT800CS)
	PLAIN	A160 - M0(20)*	(BT800CU)		
1000	16	A200 - M16	(BT1000C22**)	L200 - M	(BT1000CS)
	22	A200 - M20	(BT1000C20)		
	PLAIN	A200 - M0(20)*			

(\*\*22mm Stud Hole)

\*Undrilled.

Contact Cable Services for full Compression Connector Catalogue.



## MV Compression Connectors

Uninsulated copper terminals MV rated (up to 33kV)



Standard Cond Size mm <sup>2</sup>	Stud Size mm	CEMBRE			PRYSMIAN (BICON)	
		2A *	CA **			
16	10	2A3 - M10			BTHW16C10	BTH16CS
	12				BTHW16C12	
25	8	2A5 - M8			BTHW25C10	BTH25CS
	10	2A5 - M10			BTHW25C12	
	12	2A5 - M12	CA25 - M12			
35	8	2A7 - M8			BTHW35C10	BTH35CS
	10	2A7 - M10	CA35 - M10		BTHW35C12	
	12	2A7 - M12	CA35 - M12			
50	10	2A10 - M10	CA50 - M10	MT50TD	BTHW50C10	BTH50CS
	12	2A10 - M12	CA50 - M12		BTHW50C12	
70	10	2A14 - M10	CA70 - M10	MT70TD	BTHW70C10	BTH70CS
	12	2A14 - M12	CA70 - M12		BTHW70C12	
95	10	2A19 - M10	CA95 - M10	MT95TD	BTHW95C10	BTH95CS
	12	2A19 - M12	CA95 - M12		BTHW95C12	
	16	2A19 - M16	CA95 - M16		BTHW95C16	
120	10	2A24 - M10		MT120TD	BTHW120C10	BTH120CS
	12	2A24 - M12	CA120 - M10		BTHW120C12	
	16	2A24 - M16	CA120 - M16		BTHW120C16	
150	12	2A30 - M12	CA150 - M12	MT150TD	BTHW150C12	BTH150CS
	16	2A30 - M16	CA150 - M16		BTHW150C16	
185	12	2A37 - M12	CA185 - M12	MT185TD	BTHW185C12	BTH185CS
	16	2A37 - M16	CA185 - M16		BTHW185C16	
240	12	2A48 - M12	CA240 - M12	MT240TD	BTHW240C12	BTH240CS
	16	2A48 - M16	CA240 - M16		BTHW240C16	
300	12	2A60 - M12	CA300 - M12	MT300TD	BTHW300C12	BTH300CS
	16	2A60 - M16	CA300 - M16		BTHW300C16	
	20	2A60 - M20			BTHW300C20	
400	12	2A80 - M12	CA80 - M12	MT400TD	BTHW400C12	BTH400CS
	16	2A80 - M16	CA80 - M16		BTHW400C16	
	20				BTHW400C20	
500	12	2A100 - M12	CA100 - M12	MT500TD	BTHW500C12	BTH500CS
	16	2A100 - M16	CA100 - M16		BTHW500C16	
	20	2A100 - M20	CA100 - M20		BTHW500C20	

\*2A Heavy duty with extended barrel accepted by many for up to 33 kV applications.

\*\*CA CEMBRE equivalent to PRYSMIAN BTHW type. If the lug is required with a gel seal add the suffix GEL.

NB. Use PRYSMIAN BTHW or CEMBRE CA range where short circuit considerations are a concern.





## 2 & 4 Hole Lugs



Standard Cond Size mm <sup>2</sup>	Stud Size mm		(8mm Studs)
95	12	2A19 2M12	
120	12	2A24 2M12*	
150	12	2A30 2M12*	
185	12	2A37 2M12*	A37-4ESI
240	12	2A48 2M12*	A48-4ESI
300	12	2A60 2M12	A60-4ESI
400	12	2A80 2M12	A80-4ESI
	16	2A80 2M16	
500	12	2A100 2M12	A100-4ESI
	16	2A100 2M16	
630	12	2A120 2M12	A120-4ESI
	16	2A120 2M16	
800	16	2A160 2M16	A160-4ESI
1000	16	2A200 2M16	

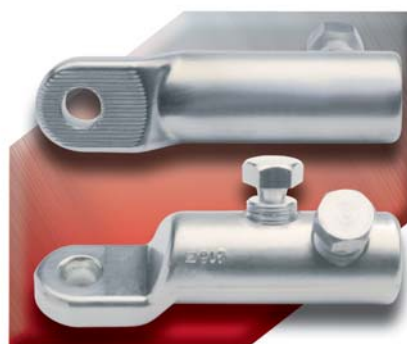
\*Lead Times

## Medium Voltage Mechanical Lugs

Up to 42kV.

Circular stranded copper or aluminium

Conductor Size *	Ref	Palm Hole Diameter mm
25 - 95	BLMT-25/95-13	13
	BLMT-120/300-17	17
35 - 150	BLMT-35/150-13	13
	BLMT-35/150-17	17
95 - 240	BLMT-95/240-13	13
	BLMT-95/240-17	17
120 - 300	BLMT-120/300-13	13
	BLMT-120/300-17	17
185 - 400	BLMT-185/400-13	13
	BLMT-185/400-17	17
	BLMT-185/400-21	21
500 - 630	BLMT-500/630-13	13
	BLMT-500/630-17	17
	BLMT-500/630-21	21



\*For sector shaped stranded conductors or solid conductors, the correct connector size can be confirmed with your usual Sales office.



## Medium Voltage Shear Bolt Connectors

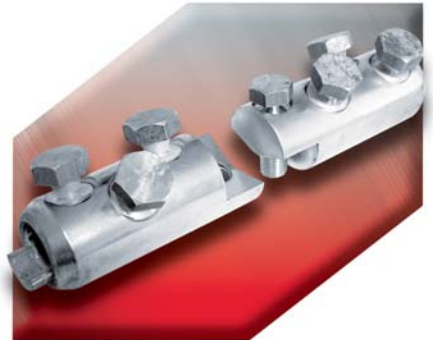
Up to 42kV. Water blocked. Circular stranded copper and aluminium conductors.

Conductor Size* mm <sup>2</sup>	Ref
25 - 95	BSM 25/95
35 - 150	BSMB 35/150
95 - 240	BSM 95/240
120 - 300	BSMB 120/300
185 - 400	BSM 185/400
500	BSMB 500
630	BSMB 630



### Split Connectors

Conductor Size* mm <sup>2</sup>	Ref
120 - 300	BSMV 120/300
185 - 400	BSMV 185/400



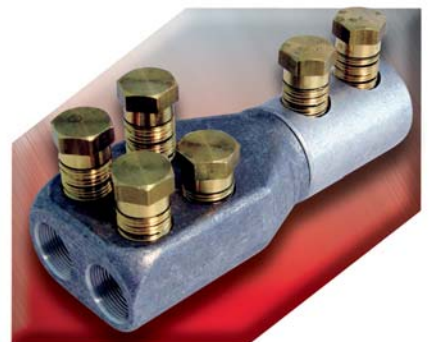
### Reduction Connectors

Conductor Size* mm <sup>2</sup>	Ref
25/95 - 95/240	BSMB 25/95 - 95/240
95/240 - 185/400	BSMB 95/240 - 185/400
185/400 - 500	BSMB 185/400 - 500
185/400 - 630	BSMB 185/400 - 630
500 - 630	BSMB 500 - 630



### B&H Split Branch Connector 11kV

Conductor Size mm <sup>2</sup>	Ref
16 - 185	HVBRM 18 SPUTC
185 - 300	HVBRM 22 SPUTC



\* For shaped stranded and solid conductors, confirm the correct connector size with your usual Cable Services sales office.





## Mechanical Connectors

For LV application.

### B&H Universal LV Straight Joint Connector

Conductor Size mm <sup>2</sup>	Ref
35 - 95	UST 95
35 - 185	UST 185
70 - 300	UST 300



1. These connectors can be supplied with special bolts for smaller conductors.
2. Brass gauze can be used on copper conductors and is recommended for small or loosely compacted conductors.

### B&H Universal LV Branch Joint Connector

Conductor Size mm <sup>2</sup>	Ref
35 - 95	UBR 95
35 - 185	UBR 185
70 - 300	UBR 300

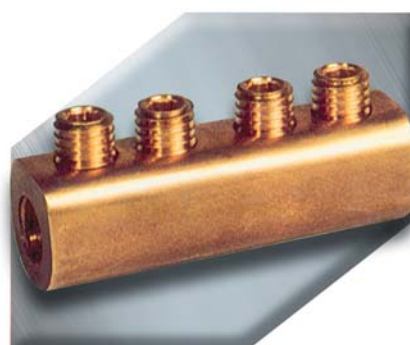


1. These connectors can be supplied with special bolts for smaller conductors.
2. Brass gauze can be used on copper conductors and is recommended for small or loosely compacted conductors.

### B&H Brass Tunnel Connector

'Oval' section waterblocked

Conductor Size mm <sup>2</sup>	Ref
4 - 25	BTC 1-45W
4 - 50	BTC 3-60W



'D' section waterblocked

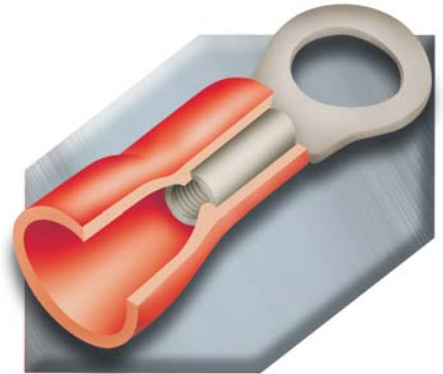
Conductor Size mm <sup>2</sup>	Ref
4 - 25	BTC 4-45W
4 - 50	BTC 5-55W



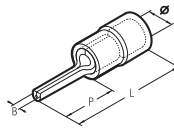
# Pre Insulated Crimp Terminals

'F' range funnel entry.

The unique funnel shape of PVC sleeve, guarantees total insertion of the conductor strands into the terminal barrel, creating a secure and reliable electrical and mechanical connection. The internal surface of the barrel is rifled to improve contact with conductor strands when crimped and to increase tensile strength. The 'F' range of terminals offer a wide range of rings, forks, pins and blades, designed to meet the ever changing requirements of the end user.

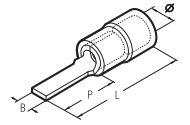


## Pin Terminals



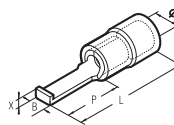
Conductor Size mm <sup>2</sup>	Ref	Dimensions (mm)				Quantity Box / Bag
		ø	B	P	L	
0.25 - 1.5	◇ RF-P 8	3.9	1.7	8.0	17.8	4,000 / 100
	◇ RF-P 10	3.9	1.8	10.0	19.8	4,000 / 100
	◇ RF-P 12	3.9	1.8	12.0	22.0	3,500 / 100
1.5 - 2.5	◇ BF-P 8	4.9	1.7	8.0	17.8	3,000 / 100
	◇ BF-P 10	4.9	1.8	10.0	19.8	3,000 / 100
	◇ BF-P 12	4.9	1.8	12.0	21.8	3,000 / 100
4 - 6	◇ GF-P 10	6.7	2.2	10.0	24.4	1,500 / 100
	◇ GF-P 12	6.7	2.2	12.0	26.6	1,500 / 100
	◇ GF-P 14	6.7	2.2	14.0	28.6	1,500 / 100

## Blade Terminals



Conductor Size mm <sup>2</sup>	Ref	Dimensions (mm)				Quantity Box / Bag
		ø	B	P	L	
0.25 - 1.5	◇ RF-PP 12	3.9	3.0	12.8	22.8	3,500 / 100
	◇ RF-PP 12/1	3.9	3.0	11.3	21.3	3,500 / 100
	◇ RF-PP 12/19	3.9	1.9	13.2	23.2	3,500 / 100
	◇ RF-PP 12/23	3.9	2.3	13.2	23.2	3,500 / 100
	◇ RF-PP 14	3.9	3.0	14.8	24.8	3,500 / 100
	◇ RF-PP 16/23	3.9	2.3	17.2	27.2	3,500 / 100
1.5 - 2.5	◇ BF-PP 12	4.9	3.5	12.8	22.8	2,500 / 100
	◇ BF-PP 12/25	4.9	2.5	13.3	23.3	2,500 / 100
	◇ BF-PP 12/29	4.9	2.9	13.3	23.3	2,500 / 100
	◇ BF-PP 16/25	4.9	2.5	17.2	27.2	2,500 / 100
4 - 6	◇ GF-PP 12	6.7	4.0	13.3	27.3	1,000 / 100
	◇ GF-PP 17	6.7	2.9	19.2	33.2	1,000 / 100

## Hooked Blade Terminals



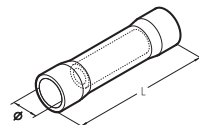
Conductor Size mm <sup>2</sup>	Ref	Dimensions (mm)					Quantity Box / Bag
		ø	B	P	L	X	
0.25 - 1.5	◇ RF-PPL 30	3.9	3.0	17.5	28.3	1.7	3,000 / 100
	◇ RF-PPL 46	3.9	4.6	17.5	28.3	1.7	3,000 / 100
1.5 - 2.5	◇ BF-PPL 30	4.9	3.0	17.5	28.3	1.7	2,500 / 100
	◇ BF-PPL 46	4.9	4.6	17.5	28.3	1.7	2,500 / 100
4 - 6	◇ GF-PPL 46	6.7	4.6	17.5	32.5	1.9	1,000 / 100

## Female Disconnect Terminal

Polycarbonate partially insulated terminals.

Conductor Size mm <sup>2</sup>	Ref	Tab Size	Quantity Box / Bag
0.25 - 1.5	RF-F 305	2.8 x 0.5	3,500 / 100
	RF-F 308	2.8 x 1.8	3,500 / 100
	RF-F 405	4.8 x 0.5	3,000 / 100
	RF-F 408	4.8 x 0.8	3,000 / 100
	RF-F 608	6.35 x 0.8	2,500 / 100
1.5 - 2.5	BF-F 405	4.8 x 0.5	3,000 / 100
	BF-F 408	4.8 x 0.8	3,000 / 100
	BF-F 608	6.35 x 0.8	2,000 / 100
4 - 6	GF-F 608	6.35 x 0.8	1,500 / 100

## Butt Connectors



Conductor Size mm <sup>2</sup>	Ref	ø (mm)	L (mm)	Quantity Box / Bag
0.25 - 1.5	◇ PL 03-M	4.0	25	3,000 / 100
1.5 - 2.5	◇ PL 06-M	5.0	25	1,500 / 100
4 - 6	◇ PL 1-M	6.5	32	800 / 100

## PVC insulated and REINFORCED

0.25 - 1.5	RK-F 608	6.35 x 0.8	2,500 / 100
1.5 - 2.5	BK-F 608	6.35 x 0.8	2,000 / 100
4 - 6	GK-F 608	6.35 x 0.8	1,500 / 100

◇ UL Approved.

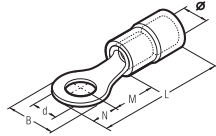




# Pre Insulated Crimp Terminals Continued

'F' range funnel entry.

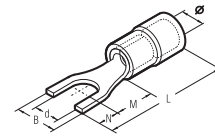
## Ring Terminals



Conductor Size mm <sup>2</sup>	ø Stud mm	Ref	Dimensions (mm)						Quantity Box / Bag
			ø	B	M	N	L	D	
	2	* RF-M 2	3.9	5.6	4.5	2.8	17.3	2.2	3,500 / 100
	3	◇ RF-M 3	3.9	5.6	4.5	2.8	17.3	3.2	3,500 / 100
	3.5	◇ RF-M 3.5	3.9	5.6	4.5	2.8	17.3	3.7	3,500 / 100
	3.5	◇ RF-M 3.5/1	3.9	6.2	7.1	3.1	20.2	3.7	3,500 / 100
	4	◇ RF-M 4	3.9	7.0	6.5	3.5	20.0	4.3	3,500 / 100
	4	RF-M 4/3	3.9	7.8	7.1	3.9	21.0	4.3	3,500 / 100
	5	◇ RF-M 5	3.9	7.8	7.1	3.9	21.0	5.3	3,500 / 100
	6	◇ RF-M 6	3.9	9.4	8.1	4.7	22.8	6.4	3,000 / 100
	6	◇ RF-M 6/1	3.9	12.0	10.3	6.0	26.3	6.4	3,000 / 100
	7	◇ RF-M 7	3.9	9.4	8.1	4.7	22.8	7.2	2,500 / 100
	8	◇ RF-M 8	3.9	12.0	10.3	6.0	26.3	8.4	2,500 / 100
	10	◇ RF-M 10	3.9	15.5	13.0	7.7	30.8	10.5	2,000 / 100
0.25 - 1.5	12	◇ RF-M 12	3.9	18.0	15.5	9.0	34.5	13.0	2,000 / 100



## Fork / Spade Terminals



Conductor Size mm <sup>2</sup>	ø Stud mm	Ref	Dimensions (mm)						Quantity Box / Bag
			ø	B	M	N	L	D	
	3	◇ RF-U 3	3.9	5.5	5.5	4.0	19.5	3.2	4,000 / 100
	3.5	◇ RF-U 3.5	3.9	6.0	6.5	3.8	20.3	3.7	4,000 / 100
	3.5	◇ RF-U 3.5/2	3.9	6.4	6.5	3.8	20.3	3.7	3,500 / 100
	4	◇ RF-U 4	3.9	6.5	7.5	3.7	21.2	4.3	3,500 / 100
	4	◇ RF-U 4/1	3.9	8.5	7.5	3.7	21.2	4.3	3,500 / 100
	4	◇ RF-U 4/2	3.9	7.5	7.5	3.7	21.2	4.3	3,500 / 100
	5	◇ RF-U 5	3.9	8.5	7.5	3.7	21.2	5.3	3,500 / 100
	5	* RF-U 5/1	3.9	9.4	7.5	3.7	21.2	5.3	3,500 / 100
	6	◇ RF-U 6	3.9	9.4	8.1	4.7	22.8	6.4	2,500 / 100
	6	◇ RF-U 6/1	3.9	12.0	9.2	7.1	26.3	6.4	2,500 / 100
	8	◇ RF-U 8	3.9	14.0	10.0	6.3	26.3	8.4	2,500 / 100
	10	◇ RF-U 10	3.9	17.5	13.0	7.7	30.8	10.5	2,000 / 100
0.25 - 1.5	12	◇ RF-U 12	3.9	20.0	15.5	9.0	34.5	13.0	1,500 / 100



	2	* BF-M 2	4.9	5.6	5.0	2.8	17.8	2.2	3,000 / 100
	3	◇ BF-M 3	4.9	5.6	5.0	2.8	17.8	3.2	3,000 / 100
	3.5	◇ BF-M 3.5	4.9	5.6	5.0	2.8	17.8	3.7	3,000 / 100
	3.5	◇ BF-M 3.5/1	4.9	6.2	6.5	3.1	19.6	3.7	3,000 / 100
	4	◇ BF-M 4	4.9	8.0	6.5	4.0	20.5	4.3	3,000 / 100
	5	◇ BF-M 5	4.9	8.0	7.5	4.0	21.5	5.3	3,000 / 100
	6	◇ BF-M 6	4.9	9.4	8.6	4.7	23.3	6.4	2,500 / 100
	6	◇ BF-M 6/1	4.9	12.0	10.3	6.0	26.3	6.4	2,500 / 100
	6	* BF-M 6/2	4.9	8.4	5.4	4.2	19.6	6.4	2,500 / 100
	7	◇ BF-M 7	4.9	10.0	7.8	5.0	22.8	7.2	2,500 / 100
	8	◇ BF-M 8	4.9	12.0	10.3	6.0	26.3	8.4	2,000 / 100
	10	◇ BF-M 10	4.9	15.5	13.0	7.7	20.8	10.5	1,500 / 100
1.5 - 2.5	12	◇ BF-M 12	4.9	18.0	15.5	9.0	34.5	13.0	1,500 / 100



	3	◇ BF-U 3	4.9	5.5	5.5	4.0	19.5	3.2	3,000 / 100
	3.5	◇ BF-U 3.5	4.9	6.4	6.5	3.8	20.3	3.7	3,000 / 100
	3.5	BF-U 3.5/1	4.9	7.2	6.5	3.8	20.3	3.7	3,000 / 100
	4	◇ BF-U 4	4.9	6.5	7.5	3.7	21.2	4.3	3,000 / 100
	4	◇ BF-U 4/1	4.9	8.5	7.5	3.7	21.2	4.3	3,000 / 100
	4	◇ BF-U 4/2	4.9	7.5	7.5	3.7	21.2	4.3	3,000 / 100
	5	◇ BF-U 5	4.9	8.5	7.5	3.7	21.2	5.3	3,000 / 100
	6	◇ BF-U 6	4.9	9.4	8.1	4.7	22.8	6.4	2,500 / 100
	6	◇ BF-U 6/1	4.9	12.0	9.2	7.1	26.3	6.4	2,500 / 100
	8	◇ BF-U 8	4.9	14.0	10.0	6.3	26.3	8.4	2,000 / 100
	10	◇ BF-U 10	4.9	17.5	13.0	7.7	30.8	10.5	2,000 / 100
1.5 - 2.5	12	◇ BF-U 12	4.9	20.0	15.5	9.0	34.5	13.0	1,500 / 100



	3	GF-M 3	6.7	8.0	8.1	4.0	26.1	3.2	1,500 / 100
	3.5	◇ GF-M 3.5	6.7	8.0	8.1	4.0	26.1	3.7	1,500 / 100
	4	◇ GF-M 4	6.7	9.0	8.1	4.5	26.6	4.3	1,500 / 100
	5	◇ GF-M 5	6.7	9.0	8.1	4.5	26.6	5.3	1,000 / 100
	6	◇ GF-M 6	6.7	11.0	11.1	5.5	30.6	6.4	1,000 / 100
	6	◇ GF-M 6/1	6.7	11.0	8.1	5.5	27.6	6.4	1,000 / 100
	7	◇ GF-M 7	6.7	11.0	11.1	5.5	30.6	7.2	1,000 / 100
	8	◇ GF-M 8	6.7	13.6	12.1	6.8	32.9	8.4	1,000 / 100
	8	GF-M 8/1	6.7	11.0	8.1	5.5	27.6	8.4	1,000 / 100
	10	◇ GF-M 10	6.7	13.6	12.1	6.8	32.9	10.5	1,000 / 100
	10	◇ GF-M 10/1	6.7	15.5	13.8	7.7	35.6	10.5	1,000 / 100
	12	◇ GF-M 12	6.7	19.0	15.1	9.5	38.6	13.0	1,000 / 100
	14	◇ GF-M 14	6.7	21.0	16.1	10.5	40.6	15.0	1,000 / 100
4 - 6	16	◇ GF-M 16	6.7	24.0	17.1	12.0	43.1	17.0	500 / 100



	3.5	◇ GF-U 3.5	6.7	7.5	8.5	3.9	26.4	3.7	1,500 / 100
	4	◇ GF-U 4	6.7	7.5	8.0	4.4	26.4	4.3	1,500 / 100
	5	◇ GF-U 5	6.7	9.5	8.0	4.4	26.4	5.3	1,500 / 100
	6	◇ GF-U 6	6.7	10.0	11.0	5.5	30.5	6.4	1,000 / 100
	8	◇ GF-U 8	6.7	15.0	12.0	8.0	34.0	8.4	1,000 / 100
	10	◇ GF-U 10	6.7	15.5	13.0	8.0	35.0	10.5	1,000 / 100
	10	◇ GF-U 10/1	6.7	17.5	13.8	7.7	35.6	10.5	1,000 / 100
	12	◇ GF-U 12	6.7	21.0	15.1	9.5	38.6	13.0	1,000 / 100
	14	◇ GF-U 14	6.7	23.0	16.1	10.5	40.6	15.0	500 / 100
4 - 6	16	◇ GF-U 16	6.7	26.0	17.1	11.5	42.6	17.0	500 / 100



◇ UL Approved.

\* Available on request.




## Polyamide PA66 Glands

Self extinguishing, -20C to +90C temperature range, IP68, available in black / light grey / dark grey.



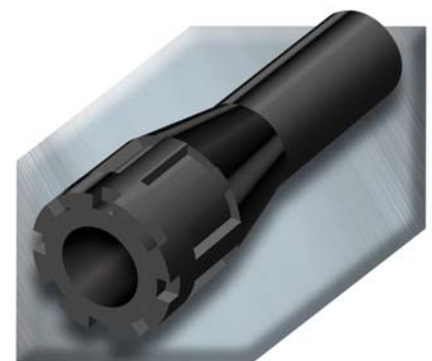
Size	Ref No. (light grey)	Overall Cable Size	
		Min (mm)	Max (mm)
M12	1900.M12	3.5	7
M16	1900.M16	5	10
M20	1900.M20	7	13
M25	1900.M25	10	17
M32	1900.M32	13	21
M40	1900.M40	19	28
M50	1900.M50	27	35
M63	1900.M63	34	45

Cembre plastic glands also available with reduce cable entry, extended threads, factory fitted with lock nuts and collar, PG and BSP threads, and with increased safety.  Prysmian versions also available.



## Heat Shrink Cable Entry Seals

Raychem cable entry seals provide an effective watertight, fume and pressure tight seal between cables and panels, closures and junction boxes. The seals have passed a thermocycling test from -40°C to + 60°C at a pressure of 0.7bar and have a rating to IP67.



Ref No.	Nominal O/D Length (mm)	Internal Dia of Tube (mm)		Internal Dia of Nylon Nut (mm)	Drill Size (mm)
		Max Expanded	Max Recovered		
CES1	70	13	3.0	19	25.5
CES2	70	19	6.3	19	25.5
CES3	95	30	12.7	28	35.5
CES4	114	43	19.0	40	51.0
CES5	175	69	36.0	73	88.0



## BW (Indoor) Type

For steel wire armoured cable without seals

- IP54 Rating.
- 2 Piece Type.



Size	Gland Kit	LSF Gland Kit	Items Per Kit	Overall Cable Size >	Min (mm)	Max (mm)
20S	420AA52	LSF20SBW	2		-	15.8
20	420AA53	LSF20BW	2		-	20.8
25	420AA55	LSF25BW	2		-	27.2
32	420AA56	LSF32BW	1		-	33.5
40	420AA57	LSF40BW	1		-	39.9
50	420AA59	LSF50BW	1		-	52.6
63	420AA61	LSF63BW	1		-	65.3
75	420AA63	LSF75BW	1		-	78.0



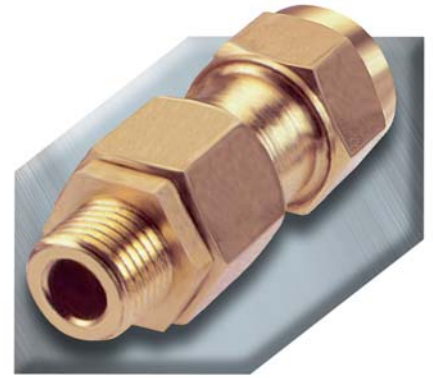
Size	Gland Kit	Items Per Kit	Overall Cable Size >	Min (mm)	Max (mm)
20S	BW 20SKIT	2		-	16.1
20	BW 20KIT	2		-	21.1
25	BW 25KIT	2		-	27.4
32	BW 32KIT	2		-	34.4
40	BW 40KIT	1		-	42.4
50S	BW 50SKIT	1		-	50.1
50	BW 50KIT	1		-	55.7
63S	BW 63SKIT	1		-	62.4
63	BW 63KIT	1		-	68.2
75S	BW 75SKIT	1		-	76.8
75	BW 75KIT	1		-	82.9



## CW Gland (Indoor/Outdoor) Type

For steel wire armoured cable - one (outer) seal

- IP66 (with sealing washer or thread sealant).



Size	Gland Kit	LSF Gland Kit	Items Per Kit	Overall Cable Size >	Min (mm)	Max (mm)
20S	422AA52	422LSF52	2		8.0	15.8
20	422AA53	422LSF53	2		11.7	20.8
25	422AA55	422LSF55	2		17.0	27.2
32	422AA56	422LSF56	1		23.5	33.5
40	422AA57	422LSF57	1		29.0	39.9
50S	422AA58	422LSF58	1		38.0	46.2
50	422AA59	422LSF59	1		39.5	52.6
63	422AA61	422LSF61	1		51.3	65.3
75	422AA63	422LSF63	1		62.5	78.0



Size	Gland Kit	Items Per Kit	Overall Cable Size >	Min (mm)	Max (mm)
20/16	CW 20/16KIT	2		6.1	11.5
20S	CW 20SKIT	2		9.5	15.9
20	CW 20KIT	2		12.5	20.9
25S	CW 25SKIT	2		14.0	22.0
25	CW 25KIT	2		18.2	26.2
32	CW 32KIT	2		23.7	33.9
40	CW 40KIT	1		27.9	40.4
50S	CW 50SKIT	1		35.2	46.7
50	CW 50KIT	1		40.4	53.1
63S	CW 63SKIT	1		45.6	59.4
63	CW 63KIT	1		54.6	65.9
75S	CW 75SKIT	1		59.0	72.1
75	CW 75KIT	1		66.7	78.5



## A1 / A2 (Indoor/Outdoor) Gland

For unarmoured cable

- Seal rated at IP66.



Size	Gland Kit	LSF Gland Kit	Items Per Kit	Overall Cable Size >	Min (mm)	Max (mm)
20SS	KM 40971	423LSF71	2		3.5	8.5
20S	KM 40952	423LSF52	2		8.0	11.5
20	KM 40953	423LSF53	2		11.0	13.5
25	KM 40955	423LSF55	2		13.0	19.5
32	KM 40956	423LSF56	1		19.0	25.5
40	KM 40957	423LSF57	1		25.0	32.0
50S	KM 40958	423LSF58	1		31.5	37.0
50	KM 40959	423LSF59	1		35.5	43.0
63S	KM 40960	423LSF60	1		42.5	50.0
63	KM 40961	423LSF61	1		49.5	55.0
75S	KM 40962	423LSF62	1		54.5	61.0
75	KM 40963	423LSF63	1		60.5	67.0



Size	Gland Kit	Items Per Kit	Overall Cable Size >	Min (mm)	Max (mm)
20S	A2 20SKIT	2		6.1	11.7
20	A2 20KIT	2		6.5	14.0
25	A2 25KIT	2		11.1	20.0
32	A2 32KIT	2		17.0	26.3
40	A2 40KIT	1		23.5	32.2
50S	A2 50SKIT	1		31.0	38.2
50	A2 50KIT	1		35.6	44.1
63S	A2 63SKIT	1		41.5	50.0
63	A2 63KIT	1		47.2	56.0
75S	A2 75SKIT	1		54.0	62.0
75	A2 75KIT	1		61.1	68.0

## E1W Gland (Indoor/Outdoor) Type

For steel wire armoured cable - inner and outer seals

- IP66 (with sealing washer or thread sealant).



Size	Gland Kit	LSF Gland Kit	Items Per Kit	Overall Cable Size >	Min (mm)	Max (mm)
20SS	KA 41371	LSF20SSEIW	2		8.0	13.2
20S	KA 41352	LSF20SEIW	2		8.0	15.8
20	KA 41353	LSF20EIW	2		11.7	20.8
25	KA 41355	LSF25EIW	2		17.0	27.2
32	KA 41356	LSF32EIW	1		23.5	33.5
40	KA 41357	LSF40EIW	1		29.0	39.9
50S	KA 41358	LSF50SEIW	1		38.0	46.2
50	KA 41359	LSF50EIW	1		39.5	52.6
63S	KA 41360	LSF63SEIW	1		50.0	58.9
63	KA 41361	LSF63EIW	1		51.3	65.3
75S	KA 41362	LSF75SEIW	1		62.0	71.6
75	KA 41363	LSF75EIW	1		62.5	78.0



Size	Gland Kit	Items Per Kit	Overall Cable Size >	Min (mm)	Max (mm)
20/16	EIW 2016SKIT	2		6.0	13.4
20S	EIW 20SKIT	2		9.5	15.9
20	EIW 20KIT	2		12.5	20.9
25	EIW 25KIT	2		17.0	26.2
32	EIW 32KIT	2		22.9	33.9
40	EIW 40KIT	1		26.0	40.4
50S	EIW 50SKIT	1		35.0	46.7
50	EIW 50KIT	1		38.0	53.1
63S	EIW 63SKIT	1		45.6	59.4
63	EIW 63KIT	1		54.6	65.9
75S	EIW 75SKIT	1		57.0	72.1
75	EIW 75KIT	1		60.4	78.5

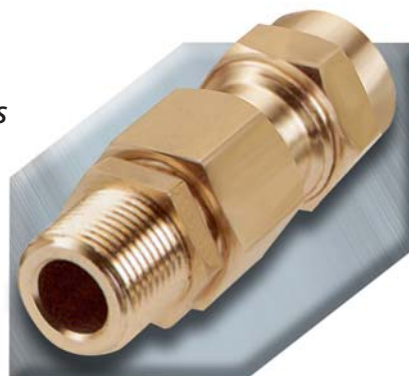




## E1WF Gland E.Exd

For steel wire armoured cable - inner and outer seals

- IP66 (with sealing washer or thread sealant).
- For use in areas designated as Hazardous Areas.



Size	Gland Kit	LSF Gland Kit	Items Per Kit	Overall Cable Size >	Min (mm)	Max (mm)
20SS	KA 47271	423LSF71	2		8.0	13.2
20S	KA 47252	423LSF52	2		8.0	15.8
20	KA 47253	423LSF53	2		11.7	20.8
25	KA 47255	423LSF55	2		17.0	27.2
32	KA 47256	423LSF56	1		23.5	33.5
40	KA 47257	423LSF57	1		29.0	39.9
50S	KA 47258	423LSF58	1		38.0	46.2
50	KA 47259	423LSF59	1		39.5	52.6
63S	KA 47260	423LSF60	1		50.0	58.9
63	KA 47261	423LSF61	1		51.3	65.3
75S	KA 47262	423LSF62	1		62.0	71.6
75	KA 47263	423LSF63	1		62.5	78.0



Size	Gland Kit	Items Per Kit	Overall Cable Size >	Min (mm)	Max (mm)
20/16	EIFW 20/16KIT	2		6.0	13.4
20S	EIFW 20SKIT	2		9.5	15.9
20	EIFW 20KIT	2		12.5	20.9
25	EIFW 25KIT	2		17.0	26.2
32	EIFW 32KIT	2		22.9	33.9
40	EIFW 40KIT	1		26.0	40.4
50S	EIFW 50SKIT	1		35.0	46.7
50	EIFW 50KIT	1		38.0	53.1
63S	EIFW 63SKIT	1		45.6	59.4
63	EIFW 63KIT	1		54.6	65.9
75S	EIFW 75SKIT	1		57.0	72.1
75	EIFW 75KIT	1		60.4	78.5

## CW Aluminium (Indoor/Outdoor) Type

- One outer seal.
- IP66 (with sealing washer or thread sealant).



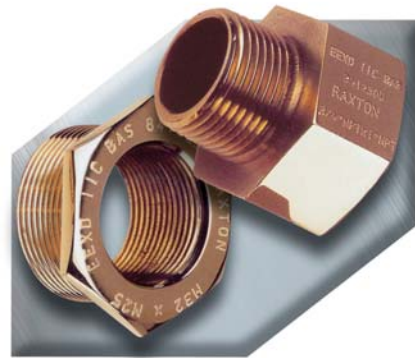
Size	Gland Kit	Items Per Kit	Overall Cable Size >	Min (mm)	Max (mm)
20S	422AL52	2		8.0	15.8
20	422AL53	2		11.7	20.8
25	422AL55	2		17.0	27.2
32	422AL56	1		23.5	33.5
40	422AL57	1		29.0	39.9
50S	422AL58	1		38.0	46.2
50	422AL59	1		39.5	52.6
63	422AL61	1		51.3	65.3
75	422AL63	1		62.0	78.0



Size	Gland Kit	Items Per Kit	Overall Cable Size >	Min (mm)	Max (mm)
20/16	CW 20/16ALKIT	2		6.1	11.5
20S	CW 20SALKIT	2		9.5	15.9
20	CW 20ALKIT	2		12.5	20.9
25	CW 25ALKIT	2		17.0	26.2
32	CW 32ALKIT	2		22.9	33.9
40	CW 40ALKIT	1		26.2	40.4
50S	CW 50SALKIT	1		35.0	46.7
50	CW 50ALKIT	1		38.0	53.1
63S	CW 63SALKIT	1		45.6	59.4
63	CW 63ALKIT	1		54.6	65.9
75S	CW 75SALKIT	1		59.0	72.1
75	CW 75ALKIT	1		66.7	78.5



*Flameproof gland adaptors and reducers  
Electrical thread conversions*



## **Thread Conversion Adaptors & Reducers**

### **Adaptors**

Provide a means of connection between dissimilar thread forms and sizes.

### **Reducers**

Effectively reduce the threaded entry diameter of an enclosure to accept a gland or fitting with a smaller thread.

### **Stopping Plugs**

Designed to close any unused entries in electrical equipment without revoking existing certification.

Many common combinations of thread adaptors and reducers are held in stock and the manufacture of less common combinations or sizes can be arranged with short lead times.

In addition to the items listed here, the Cable Services Group has extensive stocks of 'loose glands' including flameproof, nickel plated, aluminum and integrated earth.

Also stocked are brass locknuts, PVC, PCP and LSF shrouds.



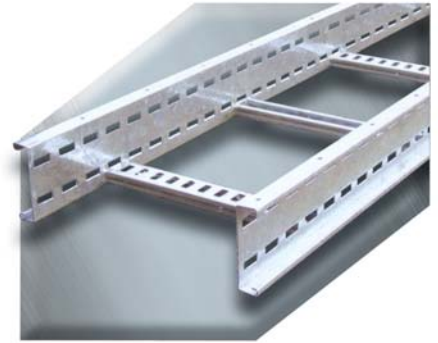




**Tyco Engineered Products**

**Unistrut Cable Ladder**

- Three side rail heights.
- Five standard widths.
- Other widths available on request.
- Seven intermediate sizes.
- Galvanised or stainless steel.
- 3m or 6m lengths.
- Complete range of bends and risers.
- Tees and crosses.



Available Lengths	Standard Rail Heights	Standard Widths	Other Widths (Available on request)	Available Material	Fittings Available
3m	100mm	150mm	100mm	Galvanised	90° Flat Bend
6m	125mm	300mm	200mm	Stainless Steel	45° Flat Bend
	150mm	450mm	400mm		Equal Tee
		600mm	500mm		Un-Equal Tee
		750mm	700mm		Equal Cross
		900mm	800mm		Un-Equal Cross
			1000mm		45° Inside Riser
					45° Outside Riser
				90° Inside Riser	
				90° Outside Riser	

Load data available on request.

**Accessory Fittings**



Equal Tee



90° Flat Bend



90° Outside Riser

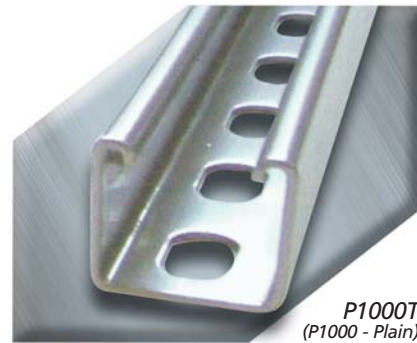


**Unistrut**

*Metal framing systems.*

Cold rolled framing systems formed from steel strip.

- Unistrut nuts are made from steel bar hardened after manufacture. The shape of the nut permits a quarter turn crosswise in the channel.
- The serrated grooves engage with the inturned edges of the channel.
- Unistrut channel and fixings conform to BS 6946 1988.
- Channel is supplied in 6m and 3m lengths.
- Standard finish is pre-galvanised - hot dip galvanised and stainless steel channel also available.



P1000T  
(P1000 - Plain)

Size	For P1000 Channel		For P3300 Channel
	Ref No. Spring Nut	Plain Nut	Ref No. Spring Nut
M6	PNL06ZP	PNP06ZP	PNS06ZP
M8	PNL08ZP	PNP08ZP	PNS08ZP
M10	PNL10ZP	PNP10ZP	PNS10ZP
M12	PNL12ZP	PNP12ZP	PNS12ZP



P3300T 10  
(P3300 - Plain)

In excess of 100 different brackets / accessories are available, making Unistrut the most versatile metal framing system available.

The brackets available include Flat Plate fittings / Ninety Degree Angle Fittings / Angled Fittings / U & Z Shape Fittings / Base Plate & Wing Fittings / Beam Clamps / Cantilever Arms / Tray Arms / Lighting Supports etc. KWIKSTRUT & KWIKSTRUT ACCESSORIES also available.



P1001T  
(P1001 - Plain)

Contact Cable Services for a comprehensive UNISTRUT catalogue.



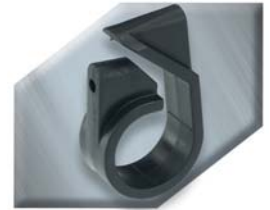
Channel Spring Nut

**CABLE TRAY**  
Cable Services  
stock a full range  
of light and heavy  
duty galvanised  
cable trays

**PRYSMIAN (BICON) Cable Cleats**  
CABLES & SYSTEMS

**Telcleat (Black Polythene or LSOH) ®**

- 10 to 51mm diameter in 8 sizes.
- Overlapping self adjusting ranges.
- Sunlight (UV) and weather resistant.
- One piece, single fixing design.
- Can be double stacked on one fixing.
- Operating temperature -70°C to +70°C.



**Low Density Black Polythene - 385AA Type**

- Unaffected by corrosive environments oils and many chemicals.

**Coloured LSF Compound - 385LSF Type**

- Low smoke and fume emission.
- Zero halogen.
- Coloured to distinguish from standard black Telcleat.
- Conforms to BS6853.

Cable Dia (mm)	Polythene Ref No.	LSOH Ref No.
10.5 - 14.5	385AA01	385LSF01
12.2 - 16.7	385AA02	385LSF02
14.6 - 19.8	385AA03	385LSF03
17.7 + 24.0	385AA04	385LSF04
21.7 - 28.5	385AA05	385LSF05
26.2 - 34.2	385AA06	385LSF06
31.9 - 41.6	385AA07	385LSF07
39.3 - 51.1	385AA08	385LSF08

**Claw Cleat (Aluminium / Aluminium Epoxy Coated) ®**

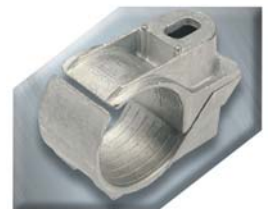
- Suitable for use with cables from 10 to 51mm diameter.
- Available in 9 sizes.
- Can be used for all types of cable routes.
- Operating temperature -60°C to +100°C.
- Two-piece, single fixing design.
- Can be stacked to a maximum of three on one fixing.  
(see packing piece 389AC03)
- Also available in cast iron.



Cable Dia (mm)	Aluminium Ref No.	Epoxy Ref No.
10 - 13	370BA01	370BB01
3 - 16	370BA02	370BB02
16 - 19	370BA03	370BB03
19 - 22	370BA04	370BB04
22 - 25	370BA05	370BB05
25 - 32	370BA06	370BB06
32 - 38	370BA07	370BB07
38 - 44	370BA08	370BB08
44 - 51	370BA09	370BB09

**Hook Cleat (Aluminium) ®**

- Suitable for use with cables from 19mm to 76mm diameter.
- Available in 8 sizes.
- Without cap, supports cable in position during installation.
- Self adjusting range.
- Two-piece, single fixing design.
- Can be double stacked on one fixing.
- Suitable for indoor dry normal industrial use or outdoor unpolluted areas.
- Operating temperature -60°C to +100°C.
- Not designed to secure cables in long vertical routes.



Cable Dia (mm)	Ref No.
19 - 22	371AA03
22 - 25	371AA04
25 - 32	371AA05
32 - 38	371AA06
38 - 44	371AA07
44 - 51	371AA08
51 - 57	371AA09
57 - 64	371AA10
64 - 70	371AA11
70 - 76	371AA12





**Heavy Duty Hook Cleat (Nylon or LSOH) ®**

- 25 to 80mm diameter in 6 sizes.
- Can be double stacked on one fixing.
- Width of cleat remains unchanged with cable size.
- Not designed to secure cables in long vertical routes.
- LSOH version.
- Suitable for outdoor use.
- Overlapping self adjusting sizes.
- Operating temperature -20°C to +100°C.



Cable Dia (mm)	Nylon Ref No.	LSOH Ref No.
25 - 35	384AA01	384LSF01
34 - 44	384AA02	384LSF02
43 - 53	384AA03	384LSF03
52 - 62	384AA04	384LSF04
61 - 71	384AA05	384LSF05
70 - 80	384AA06	384LSF06

**2 Bolt Cleat (High Density Polythene or LSOH) ®**

- Suitable for use with cables from 50 to 94mm diameter.
- Available in 7 sizes.
- Sunlight (UV) and weather resistant.
- Two-piece, two fixing design.
- Operating temperature -20°C to +90°C.
- Can be double stacked on common fixings.
- Also available in cast iron.



Cable Dia (mm)	Polythene Ref No.	LSOH Ref No.
50 - 58	374AA01	374LSF01
56 - 64	374AA02	374LSF02
62 - 70	374AA03	374LSF03
68 - 76	374AA04	374LSF04
74 - 82	374AA05	374LSF05
80 - 88	374AA06	374LSF06
86 - 94	374AA07	374LSF07

**Black High Density Nylon 66**

- Unaffected by corrosive environment, oils and many chemicals.

**LSOH**

- Low smoke and zero halogen.
- Suitable for use with Afumex, LSOH and LSF cable.
- LUL Approved.

**2 Bolt Cleat (Aluminium / Aluminium Epoxy Coated) ®**

- Suitable for use with cables from 51 to 114mm diameter.
- Available in 10 sizes.
- Can be used for all types of cable routes.
- Plain finish - for indoor dry normal industrial use or outdoor unpolluted areas.  
Epoxy coated for more hostile conditions.
- Operating temperature -60°C to +100°C.
- Two piece, two fixing design.
- Can be double stacked on common fixings.
- Also available in cast iron / epoxy coated (370CG and 370CE series).

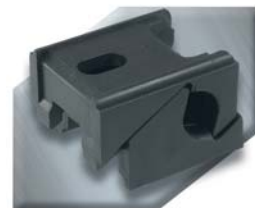


Cable Dia (mm)	Aluminium Ref No.	Epoxy Ref No.
51 - 57	370BA10	370BB10
57 - 64	370BA11	370BB11
64 - 70	370BA12	370BB12
70 - 76	370BA13	370BB13
76 - 83	370BA14	370BB14
83 - 89	370BA15	370BB15
89 - 95	370BA16	370BB16
95 - 101	370BA17	370BB17
101 - 108	370BA18	370BB18
108 - 114	370BA19	370BB19

**PRYSMIAN (BICON) Cable Cleats**  
CABLES & SYSTEMS

**Ranger Hook Cleat (High Impact Black Polystyrene) ®**

- 13 to 76mm diameter in 6 sizes.
- Overlapping, self adjusting size.
- 'C' section channel location, aids fixing and stacking.
- Double stacking facility.
- Operating temperature -20°C to +90°C.
- Sunlight (UV) and weather resistant.
- Not designed for long vertical runs.
- Unaffected by corrosive environments and many chemicals.
- LSF versions available.



Cable Dia (mm)	Ref No.
13 - 18	382AA01
17 - 22	382AA02
21 - 28	382AA03
27 - 37	382AA04
36 - 51	382AA05
50 - 76	382AA06

**Trefoil Single & Two Bolt Cleats (Aluminium) ®**

- 24 to 76mm diameter cable in trefoil groups in 33 sizes.
- Can be used for all types of cable routes.
- Supplied complete with top fastening.
- Available as either single or two fixing design.
- Plain finish for indoor dry normal industrial use or outdoor unpolluted areas.
- Epoxy coated for more hostile conditions.
- Operating temperature -60°C to +100°C.



Cable Dia (mm)	Single Bolt Ref No.	Two Bolt Ref No.
36 - 38	376AC09	376AB09
38 - 40	376AC10	376AB10
40 - 41	376AC11	376AB11
41 - 43	376AC12	376AB12
43 - 44	376AC13	376AB13
44 - 46	376AC14	376AB14
46 - 48	376AC15	376AB15
48 - 49	376AC16	376AB16
49 - 51	376AC17	376AB17
51 - 53	376AC18	376AB18
53 - 54	376AC19	376AB19
54 - 55.5	376AC20	376AB20
55.5 - 57	376AC21	376AB21
57 - 59	376AC22	376AB22
59 - 60	376AC23	376AB23
60 - 62	376AC24	376AB24
62 - 63.5	376AC25	376AB25
63.5 - 65	376AC26	376AB26
65 - 66.5	376AC27	376AB27
66.5 - 68	376AC28	376AB28
73 - 74.5	376AC32	376AB32

**Single Bolt Fixing**

- Plain Finish - 376AC Type
- Epoxy Coated - 376AE Type

**Two Bolt Fixing**

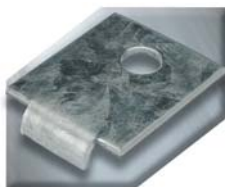
- Plain Finish - 376AB Type
- Epoxy Coated - 376AD Type

Cable Dia (mm)	Single Bolt Ref No.	Two Bolt Ref No.
24 - 25	376AC01	376AB01
25 - 27	376AC02	376AB02
27 - 28	376AC03	376AB03
28 - 30	376AC04	376AB04
30 - 32	376AC05	376AB05
32 - 34	376AC06	376AB06
34 - 35	376AC07	376AB07
35 - 36	376AC08	376AB08

**Adaptor Plate (Mild Steel) ®**

- To assist fixing cleats to standard 'Unistrut' type channel.

Size	Ref No.
M6 Galvanised	380AG01
M10 Galvanised	380AG02
M12 Galvanised	380AG03
M10 Epoxy Coated	380AG32



**Packing Piece (Aluminium / Aluminium Epoxy Coated) ®**

- To enable stacking of claw cleats.

Size	Ref No.
Aluminium	389AC03
Aluminium Epoxy Coated	389AC04





# PRYSMIAN (BICON) MultiCleave Plus Range

CABLES & SYSTEMS



## Multicleat / Multistrap System® Patent No 2082242

- 24 to 110mm diameter cables in trefoil groups in 10 sizes.
- Exceptional overlapping ranges.
- Non-magnetic materials used throughout, except for cast iron bases.
- Multicleat bases available as either single or two fixing designs.
- Operating temperature -60°C to +100°C.
- Multicleat bases available in cast iron, aluminium alloy or stainless steel with various finishes.

### Multicleat Plus - Standard & Heavy Duty (Aluminium Base)®

Suitable for single or trefoil cable formations.

Single Cable Dim (mm)	Std Ref No.	Heavy Duty Ref No.
85 - 110	-	378AB29
105 - 120	378AB09	378AB59

Trefoil Cable Dim (mm)	Std Ref No.	Heavy Duty Ref No.
24 - 34	378AB01	378AB51
30 - 41	378AB02	378AB52
37 - 47	378AB03	378AB53
43 - 54	378AB04	378AB54
50 - 60	378AB05	378AB55
56 - 67	378AB06	378AB56
63 - 73	378AB07	378AB57
69 - 80	378AB08	378AB58
72 - 85	-	378AB36
82 - 95	-	378AB37
92 - 105	-	378AB38
102 - 115	-	378AB39
112 - 125	-	378AB40
122 - 135	-	378AB41
132 - 145	-	378AB42

### Multicleat Plus - Standard & Heavy Duty (Epoxy Coated Aluminium Base)®

Suitable for single or trefoil cable formations.

Single Cable Dim (mm)	Std Ref No.	Heavy Duty Ref No.
85 - 110	-	378AD29
105 - 120	378AD09	378AD59

Trefoil Cable Dim (mm)	Std Ref No.	Heavy Duty Ref No.
24 - 34	378AD01	378AD51
30 - 41	378AD02	378AD52
37 - 47	378AD03	378AD53
43 - 54	378AD04	378AD54
50 - 60	378AD05	378AD55
56 - 67	378AD06	378AD56
63 - 73	378AD07	378AD57
69 - 80	378AD08	378AD58
102 - 115	-	378AD39

### Multicleat Plus - Standard & Heavy Duty (Stainless Steel Base - Single Bolt)®

Suitable for single or trefoil cable formations.

Single Cable Dim (mm)	Std Ref No.	Heavy Duty Ref No.
105 - 120	378PF09	378PF59

Trefoil Cable Dim (mm)	Std Ref No.	Heavy Duty Ref No.
24 - 34	378PF01	378PF51
30 - 41	378PF02	378PF52
37 - 47	378PF03	378PF53
43 - 54	378PF04	378PF54
50 - 60	378PF05	378PF55
56 - 67	378PF06	378PF56
63 - 73	378PF07	378PF57
69 - 80	378PF08	378PF58

## Multistrap®

- A multistrap is a strap complete with a tensioning clip, securing pin and winding key all made from highly corrosion resistant non-magnetic stainless steel.
- They are used as an intermediate restraint between Multicleats.
- They may be used to bind cables together.
- Improved strap design - shorter, thicker strap with safer rounded edges.
- Multistraps are available in two strengths:  
**Standard Duty** - designed to have 2 loops of 0.38mm thick strap around the cables.  
**Heavy Duty** - designed to have 3 loops of 0.38mm thick strap around the cables.



### Multistrap Plus - Standard & Heavy Duty

For use as an intermediate support between multicleats.

Trefoil Cable Dim (mm)	Std Ref No.	Heavy Duty Ref No.
24 - 34	378AB01	378AB51
30 - 41	378AB02	378AB52
37 - 47	378AB03	378AB53
43 - 54	378AB04	378AB54
50 - 60	378AB05	378AB55
56 - 67	378AB06	378AB56
63 - 73	378AB07	378AB57
69 - 80	378AB08	378AB58

Trefoil Cable Dim (mm)	Std Ref No.	Heavy Duty Ref No.
72 - 85	-	378AB36
82 - 95	-	378AB37
92 - 105	-	378AB38
102 - 115	-	378AB39
112 - 125	-	378AB40
122 - 135	-	378AB41
132 - 145	-	378AB42

### LSOH Liners

LSF liners can be supplied for use with Multistrap.

For Styles	Ref No.
01 - 04 inc. 51 - 54 inc.	377LSF01
05 - 09 inc. 36 - 37 inc. 55 - 59 inc.	377LSF02



## Cable Cleats Selection Chart

Cable Type	CABLE SPEC.		CLEATS					Horizontal Spacing of Cleats (mm)
	Conductor Area (mm <sup>2</sup> )	No. Of Cores	Telcleat Black Polythene 385AA- 385 LSF	Hookcleat Alum 371AA-	Nylon 384AA-	Claw & 2 Bolt Cleats 370BA- *	Ranger Cleat High Impact Polystyrene 382AA-	
1.5	2	01	-	-	-	01	-	300
	3	01	-	-	-	01	-	300
	4	01	-	-	-	01	01	300
	7	02	-	-	-	02	01	350
	12	03	-	-	-	03	02	350
	19	04	-	-	-	04	03	400
	27	05	-	-	01	05	03	400
37	06	05	01	01	06	04	400	
2.5	2	01	-	-	-	02	01	300
	3	01	-	-	-	02	01	300
	4	02	-	-	-	02	01	300
	7	02	-	-	-	03	01	350
	12	04	-	-	-	04	03	400
	19	05	-	01	-	05	03	400
	27	06	05	01	-	06	04	400
37	06	05	01	01	06	04	400	
4	2	02	-	-	-	02	01	350
	3	02	-	-	-	02	01	350
	4	03	-	-	-	03	01	350
6	2	03	-	-	-	03	01	350
	3	03	-	-	-	03	01	350
	4	04	-	-	-	04	02	350
10	2	04	-	-	-	04	02	400
	3	04	-	-	-	04	02	400
	4	04	-	-	-	05	03	400
16	2	04	-	-	-	03	03	400
	3	04	-	-	-	05	03	400
	4	05	05	-	-	06	03	400
25	2	04	-	-	-	04	03	400
	3	05	-	01	-	05	03	400
	4	05	05	01	-	06	04	400
35	2	05	-	01	-	05	04	400
	3	05	05	01	-	06	04	400
	4	05	05	01	-	06	04	400
50	2	05	05	01	-	06	03	400
	3	06	05	01	-	06	04	400
	4	06	05	01	-	06	04	400
70	2	06	05	01	-	06	04	400
	3	06	06	01	-	07	04	400
	4	07	06	02	-	07	04	400
95	2	06	06	01	-	07	04	400
	3	07	06	01	-	07	04	400
	4	08	07	02	-	08	05	600
120	2	07	06	02	-	07	04	400
	3	07	07	02	-	08	05	400
	4	08	08	03	-	09	05	600
150	2	07	07	02	-	08	05	400
	3	08	08	03	-	09	05	600
	4	-	09	03	-	10	05	600
185	2	08	08	03	-	09	05	600
	3	08	08	03	-	09	05	600
	4	-	09	04	-	10	06	750
240	2	08	08	03	-	09	05	600
	3	-	09	03	-	10	06	750
	4	-	10	04	-	11	06	900
300	2	-	09	04	-	10	06	750
	3	-	10	04	-	11	06	750
	4	-	11	05	-	12	06	900
400	2	-	10	04	-	11	06	-
	3	-	11	05	-	12	06	-
	4	-	12	06	-	13	06	-

1kV XLPE ARMoured CABLES TO BS 5467

\* Two Bolt cleats from 370BA10.

Details on cleats for cable in trefoil & voltages other than 1kV available on request. The recommendations above are given in good faith, but the dimensions of cable vary with manufacturing tolerances and we suggest that the cable diameter is measured where possible before purchasing cleats.





## Insuloid Cable Ties

### Standard Ties

The Insulok range of cable ties is moulded in Nylon 66. Standard colours black and neutral.

- One piece, all plastic (no metal pins or fasteners).
- Quick, simple fixing by hand or with tensioning tools.
- Low cost components.
- Manufactured to the quality control requirements of BS 5750 Part 2 and the U.S. Mil. Spec. 23190.

The 'T' range of ties is listed by the U.S. Defence Department and meets the dimensional requirements of Drawing MS 3367.

### Approvals

American Mil. Spec. 23190 U.L. (Underwriters Laboratory) Defence Standard AQAP-9 Lloyds Register of Shipping Bureau Veritas Ford Q101.

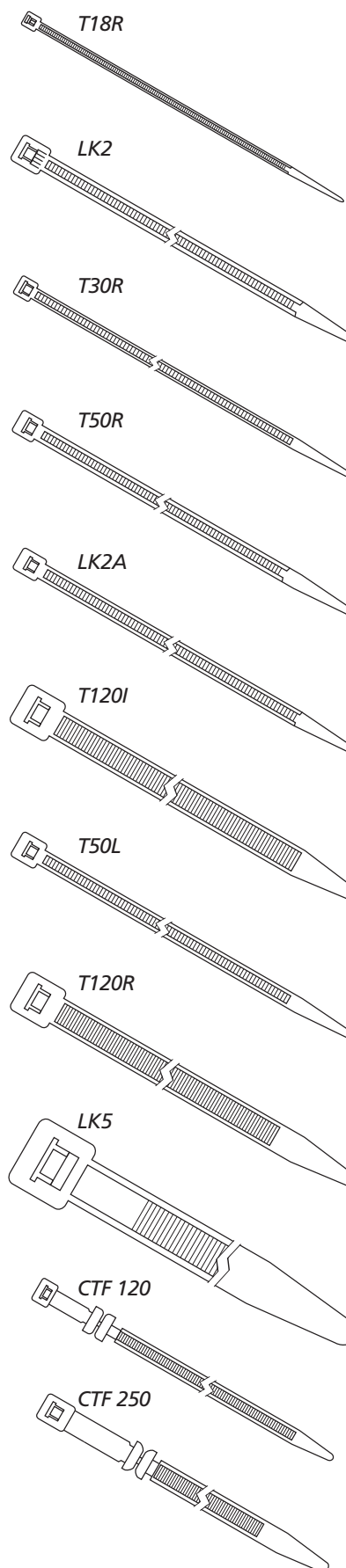
Ref No.	Nom. Overall Length (mm)	Strap Width (mm)	Min Tensile Strength (kg)	Max Cable Bundle Dia (mm)
T18R	100	2.5	8.1	16
LK2	120	2.5	8.1	16
T30R	150	3.5	13.6	35
T50R	200	4.6	22.7	50
LK2A	270	4.8	22.7	73
T120I	300	8.6	45.5	70
T50L	385	4.6	22.7	109
T120R	390	7.6	54.4	108
LK5	540	13.0	113.4	152

### Cable Tray Fixing Ties

These simple, neat ties provide a permanent answer to the problem of fixing cable to cable trays. The one piece moulding in tough, flexible Nylon 66, snaps apart to slot into cable trays.

Ref No.	Nom. Overall Length (mm)	Strap Width (mm)	Min Tensile Strength (kg)	Max Cable Bundle Dia (mm)
CTF 120	315	7.6	54.5	-
CTF 250	360	13.0	113.4	-

Other ties available include releasable and stainless steel types. Self adhesive bases and banding strap also stocked.

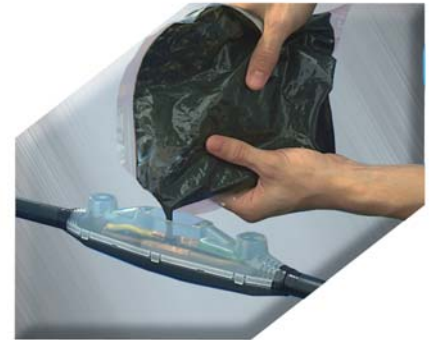




## Low Voltage Resin Joints

For power cables

3M 'Scotchcast' LA and LB series for PVC/PVC/SWA/PVC and XLPE cables to 3.3kV.



- 1471N Polyetherurethane resin.
- Complete with armour continuity.
- Connectors should be ordered separately - see page 5.

### Inline Joints

Kit Reference	2 Core Conductor Size mm <sup>2</sup>	3 Core Conductor Size mm <sup>2</sup>	4 Core Conductor Size mm <sup>2</sup>
LA21	1.5 - 4	1.5 - 2.5	1.5 - 2.5
LA22	6 - 25	4 - 10	4 - 10
LA23	35 - 50	16 - 25	16
LA24	70 - 95	35 - 50	25 - 50
LA25	120 - 185	70 - 120	70 - 95
LA26	240 - 300	150 - 185	120 - 185
LA27	400	240 - 300	240 - 300

### Branch Joints

Kit Reference	Main Cable 4 Core mm <sup>2</sup>	Branch Cable 2 Core mm <sup>2</sup>
LB21	1.5 - 2.5	1.5 - 2.5
LB22	4 - 10	1.5 - 10
LB23	16 - 35	1.5 - 25
LB24	50 - 70	1.5 - 70
LB25	95 - 185	50 - 185

3M 'Scotchcast' BK series for PVC/PVC/SWA/PVC and XLPE cables to 1kV.

- No 47 Polyetherurethane resin.

### Inline Joints

Kit Reference	2 Core Conductor Size mm <sup>2</sup>	3 Core Conductor Size mm <sup>2</sup>	4 Core Conductor Size mm <sup>2</sup>
BK1	1.5 - 4	1.5 - 2.5	1.5 - 2.5
BK2	6 - 25	4 - 10	4 - 10
BK3	35 - 50	16 - 25	16
BK4	70 - 95	35 - 50	25 - 50



## Low Voltage Resin Joints

*For hazardous areas*

- For armoured PVC and XLPE power cable.
- For use in petroleum zones 1 and 2.
- Also suitable for lead sheathed cables and transition joints.
- 1400u resin - suitable for areas where there is a risk of gas, oil, sewage or chemical spillage.



### *Inline Joints*

Kit Reference	2 Core Conductor Size mm <sup>2</sup>	3 Core Conductor Size mm <sup>2</sup>	4 Core Conductor Size mm <sup>2</sup>
LR20	1.5 - 4	1.5 - 4	1.5 - 2.5
LR21	6	6	4 - 6
LR31	10 - 16	10 - 16	0
LR32	25	-	16
LR40	35	25	25
LR41	50	25 - 50	-
LR42	-	-	35
LR50	70 - 95	70	50
LR51	120	95	70
LR60	150	-	95
LR61	185	120	120
LR70	240	150 - 185	150
LR71	300	240 - 300	185
LR72	400	-	-
LR80	-	400	240 - 300
LR81	-	-	400





## Low Voltage Jointing Kits

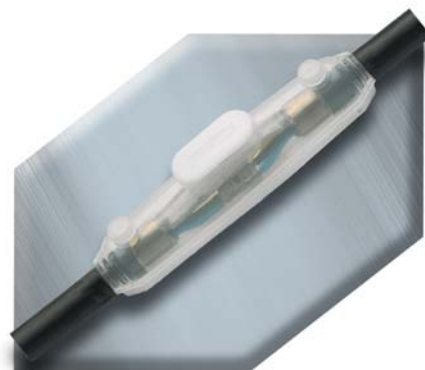
2 part polyurethane resin.

- Connectors supplied separately - see page 5.

Kit Reference	2 Core mm <sup>2</sup>	3 Core mm <sup>2</sup>	4 Core mm <sup>2</sup>
---------------	------------------------	------------------------	------------------------

### Standard Straight Joint

MPJ1	1.5 - 6	1.5 - 6	1.5 - 6
MPJ2	10 - 16	10	10
MPJ3	25 - 35	16 - 25	16 - 25
MPJ4	50 - 95	35 - 70	35 - 70
MPJ5	120 - 185	95	95
MPJ6	240 - 300	120 - 185	120 - 185
MPJ7	-	240 - 300	240 - 300
MPJ8	400*	400*	400*

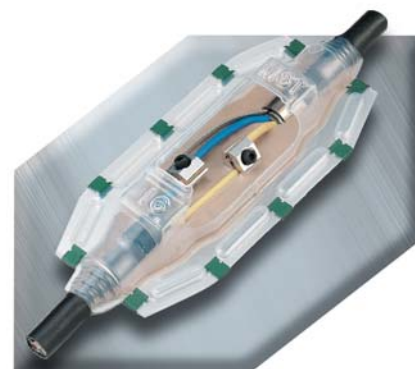


Standard Kit

### Universal Straight Joints

(Large volume shell suitable for mechanical connectors)

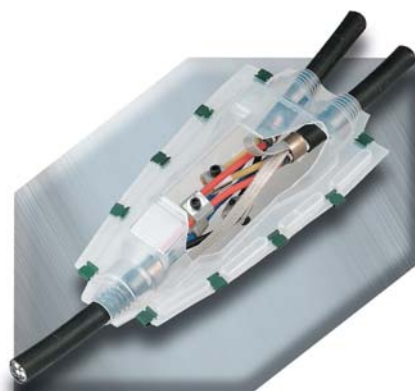
MST6	1.5 - 10	1.5 - 6	1.5 - 6
MST16	16 - 25	10 - 25	10 - 16
MST35	35	35	25 - 35
MST95	50 - 95	50 - 95	50 - 95
MST185	120 - 185	120 - 185	120 - 185
MST300	240 - 300	240 - 300	240 - 300



Universal Kit

### Universal Branch Joints

MBR6	1.5 - 10	1.5 - 6	1.5 - 6
MBR16	16 - 25	10 - 25	10 - 16
MBR35	35	35	25 - 35
MBR95	50 - 95	50 - 95	50 - 95
MBR185	120 - 185	120 - 185	120 - 185
MBR300	240 - 300	240 - 300	240 - 300



Universal Branch Kit

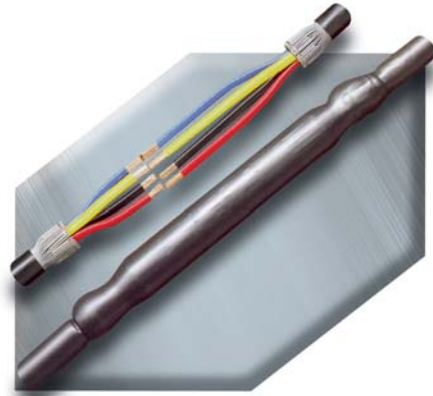
\* Joint does not accommodate crossed cores.





## Heat Shrinkable Jointing Systems

1kV - 3.6kV 'Shrink Joint' straight joints for XLPE and PVC armoured cables.



### Components

Heat shrinkable, adhesive - coated connector insulating tubing and outer sealing and protection sleeve. AR101 and AR102 contain galvanised steel braid to provide mechanical protection and earth continuity, while AR3, AR4 and AR5 contain a galvanised steel case.

Kit Reference	2 Core mm <sup>2</sup>	3 Core mm <sup>2</sup>	4 Core mm <sup>2</sup>
AR101	1.5 - 16	1.5 - 10	1.5 - 4
AR102	10 - 35	6 - 25	6 - 16
AR3	35 - 95	25 - 70	25 - 50
AR4	120 - 240	95 - 185	70 - 150
AR5	300	240 - 300	185 - 300

Connectors supplied separately - see page 5.

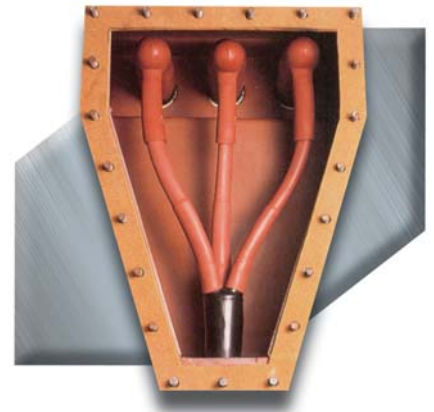
See the Service Connection products section for LV Utility Joints.





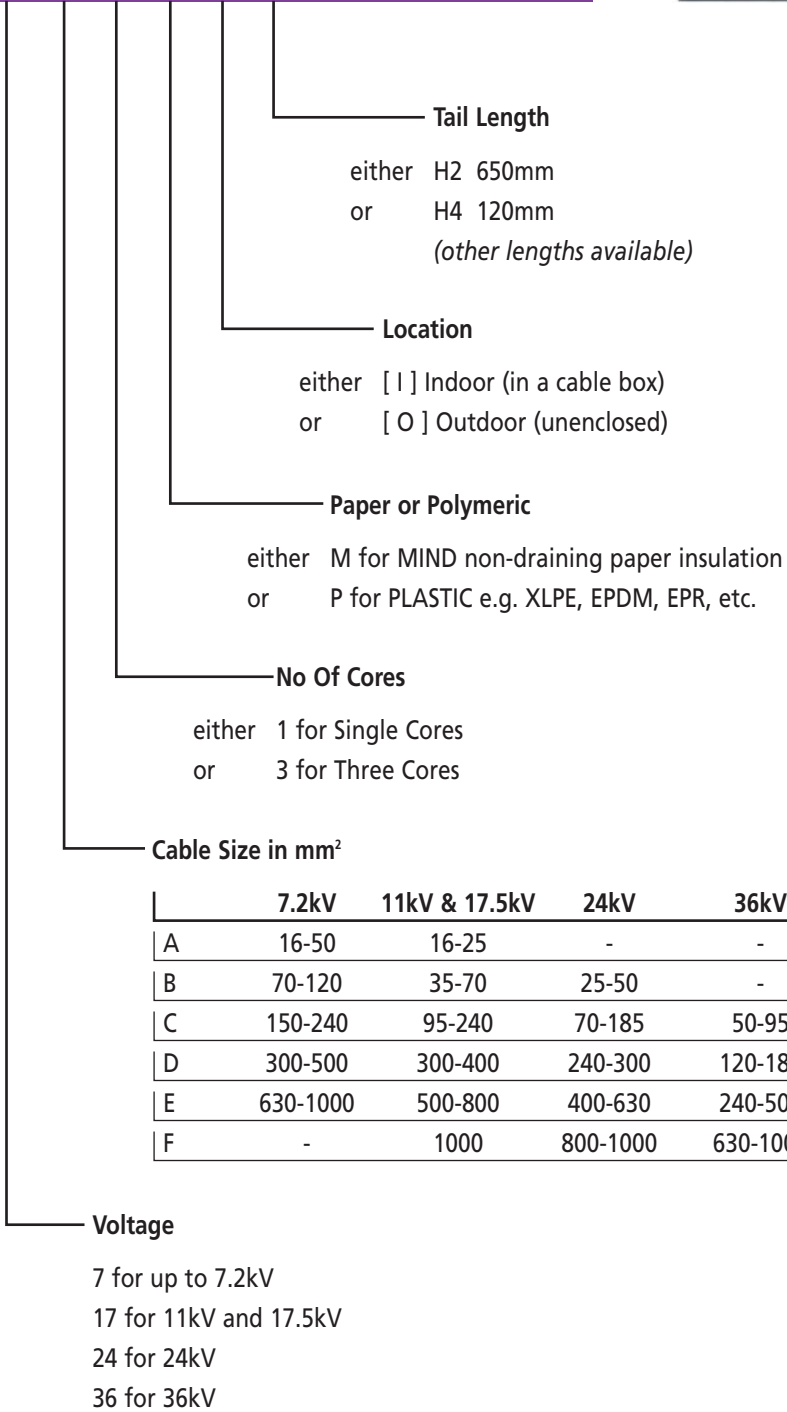
## Heat Shrink

Terminations for polymeric and MIND paper insulated cables from 7.2kV up to 36kV.



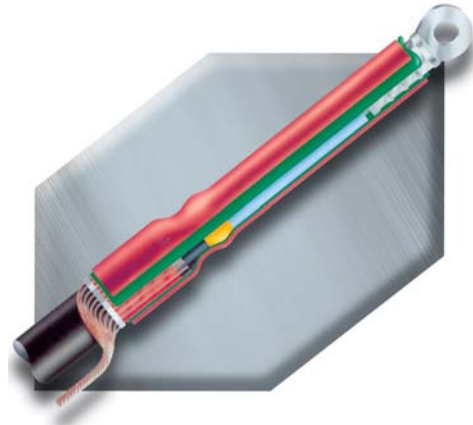
### Termination Selection

Typical Part Number  
**EPKT - 17 C 3 M I H2**



## IXSU-F / OXSU-F

For polymeric cables up to 42kV.  
Heat shrinkable medium voltage terminations  
for indoor and outdoor applications.



### 12kV Single Core - Termination Family

Indoor

Ref	Cross Section mm <sup>2</sup>
IXSU-F 3111	10 - 35
IXSU-F 3121	25 - 95
IXSU-F 3131	95 - 240
IXSU-F 3141	240 - 500
IXSU-F 3151	500 - 800

Outdoor

Ref	Cross Section mm <sup>2</sup>
OXSU-F 3111	10 - 35
OXSU-F 3121	25 - 95
OXSU-F 3131	95 - 240
OXSU-F 3141	240 - 500
OXSU-F 3151	500 - 800

### 12kV Screened 3 Core without Armour - Termination Family

Indoor

Ref	Tail Length mm	Cross Section mm <sup>2</sup>
IXSU-F 3301	450	10 - 16
IXSU-F 3304	1200	10 - 16
IXSU-F 3311	450	16 - 35
IXSU-F 3314	1200	16 - 35
IXSU-F 3321	450	25 - 70
IXSU-F 3324	1200	25 - 70
IXSU-F 3331	450	95 - 240
IXSU-F 3334	1200	95 - 240
IXSU-F 3341	450	240 - 500
IXSU-F 3344	1200	240 - 500

Outdoor

Ref	Tail Length mm	Cross Section mm <sup>2</sup>
OXSU-F 3301	450	10 - 16
OXSU-F 3304	1200	10 - 16
OXSU-F 3311	450	16 - 35
OXSU-F 3314	1200	16 - 35
OXSU-F 3321	450	25 - 70
OXSU-F 3324	1200	25 - 70
OXSU-F 3331	450	95 - 240
OXSU-F 3334	1200	95 - 240
OXSU-F 3341	450	240 - 500
OXSU-F 3344	1200	240 - 500

17.5 / 24 / 42kV versions available.

### 36kV Single Core - Termination Family

Indoor

Ref	Cross Section mm <sup>2</sup>
IXSU-F 6131	50 - 120
IXSU-F 6141	120 - 400
IXSU-F 6151	400 - 800

Outdoor

Ref	Cross Section mm <sup>2</sup>
OXSU-F 6131	50 - 120
OXSU-F 6141	120 - 400
OXSU-F 6151	400 - 800

### 36kV Screened 3 Core without Armour - Termination Family

Indoor

Ref	Tail Length mm	Cross Section mm <sup>2</sup>
IXSU-F 6332	650	50 - 120
IXSU-F 6334	1200	50 - 120
IXSU-F 6342	650	120 - 300
IXSU-F 6344	1200	120 - 300
IXSU-F 6352	650	400 - 500
IXSU-F 6354	1200	400 - 500

Outdoor

Ref	Tail Length mm	Cross Section mm <sup>2</sup>
OXSU-F 6332	650	50 - 120
OXSU-F 6334	1200	50 - 120
OXSU-F 6342	650	120 - 300
OXSU-F 6344	1200	120 - 300
OXSU-F 6352	650	400 - 500
OXSU-F 6354	1200	400 - 500

17.5 / 24 / 42kV versions available.



**TFTI - TFTO**  
**Cold Applied Terminations**

*For single core polymeric cables up to 42kV cold shrink medium voltage terminations for indoor and outdoor applications.*



**12kV Indoor**

Ref	Cross Section mm	Dia Insulation mm
TFTI 3112	25 - 70	13.5 - 21.0
TFTI 3122	70 - 185	17.0 - 28.0
TFTI 3132	150 - 400	23.0 - 37.0
TFTI 3142	400	30.0 - 46.0

**36kV Indoor**

TFTI 6132	35 - 150	23.0 - 37.0
TFTI 6142	150 - 400	30.0 - 46.0

17.5 / 24 / 42kV versions available on request.

**12kV Outdoor**

TFTO 3112	25 - 70	13.5 - 21.0
TFTO 3122	70 - 185	17.0 - 28.0
TFTO 3132	150 - 400	23.0 - 37.0
TFTO 3142	400	30.0 - 46.0

**36kV Outdoor**

TFTO 6132	35 - 150	23.0 - 37.0
TFTO 6142	150 - 400	30.0 - 46.0

Contact your Cable Services sales office for 3 core cable applications.







## Armour Earthing

The armour wires of paper or plastic cables can be terminated to earth using mechanical clamping rings.



Part Number	Single Core Diameter Range (mm)	Application Range (mm <sup>2</sup> )				
		7.2kV	12kV	17.5kV	24kV	36kV
EAKT 1636	21 - 32	16 - 70	16 - 70	16 - 50	16 - 50	-
EAKT 1637	33 - 50	95 - 400	95 - 400	70 - 400	70 - 300	16 - 185
EAKT 1638	51 - 67	500 - 800	500 - 800	500 - 800	400 - 800	240 - 630

Part Number	Triple Core Diameter Range (mm)	Application Range (mm <sup>2</sup> )				
		7.2kV	12kV	17.5kV	24kV	36kV
EAKT 1642	40 - 67	16 - 120	16 - 120	16 - 95	16 - 35	16 - 25
EAKT 1643	50 - 86	150 - 240	150 - 240	120 - 185	50 - 120	35 - 95
EAKT 1644	60 - 94	300 - 400	300 - 400	240 - 300	150 - 185	120 - 185
EAKT 1645	70 - 110	-	-	-	240 - 300	240 - 300

## Solderless Earth Connection

Copper tape screens on plastic cables can be earthed mechanically by using Raychem's solderless earth kit. The kit comes complete with a tinned copper braid and a mechanical roll spring for each conductor.



Part Number	Diameter Over Screen (mm)	Application Range (mm <sup>2</sup> )				
		7.2kV	12kV	17.5kV	24kV	36kV
EAKT 1655	12 - 18	16 - 50	16 - 50	16 - 25	-	-
EAKT 1656	19 - 24	70 - 150	70 - 150	35 - 95	25 - 70	25 - 35
EAKT 1657	25 - 30	185 - 300	185 - 240	120 - 185	95 - 150	50 - 70
EAKT 1658	31 - 44	400 - 630	300 - 630	240 - 500	185 - 500	95 - 300
EAKT 1659	41 - 65	800 - 1000	800 - 1000	630 - 1000	630 - 1000	400 - 1000



## Single Solderless Earth Connection

For 3 core paper lead cable.

Part Number	Cable Size (mm <sup>2</sup> )		
	6.6kV	11kV	33kV
EAKT 1669	16 - 120	16 - 95	-
EAKT 1670	150 - 240	120 - 185	-
EAKT 1671	300 - 400	240 - 300	50
EAKT 1672	-	400	70 - 300



## Single Solderless Earth Connection

For 3 core corrugated aluminium sheathed cable.

Part Number	Cable Size (mm <sup>2</sup> )
SMOE 61203	95 - 300

## Heat Shrink Insulating Boots

Set of 3 for up to 17.5kV.

For use in switchgear and transformers where there is insufficient clearance for operation in air or to protect against flash over due to rodents or extreme humidity.

Cable Range	Straight Boots	Right Angle Boots
	Part Number	Part Number
10 - 35mm <sup>2</sup>	RSRB 4022	RSRB 4042
50 - 95mm <sup>2</sup>	RSRB 4024	RSRB 4044
120 - 300mm <sup>2</sup>	RSRB 4026	RSRB 4046



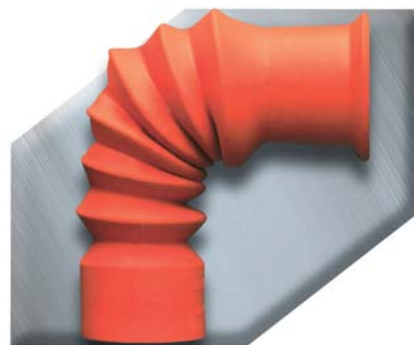
## Cold Applied Inline or Right Angle 'Flexy' Boots

Set of 3 for up to 17.5kV.

The boot can be removed or reinstalled without the need for additional material, allowing access to the bushing connection for test purposes.

Bushing diameter 31mm to 70mm (bushings less than 45mm use collar).

Conductor Range	Part Number
35 - 400mm <sup>2</sup>	SMOE62804



Also available RCAB5120 for 630Amp straight bushing 24kV.



## Cable Box Extension Glands

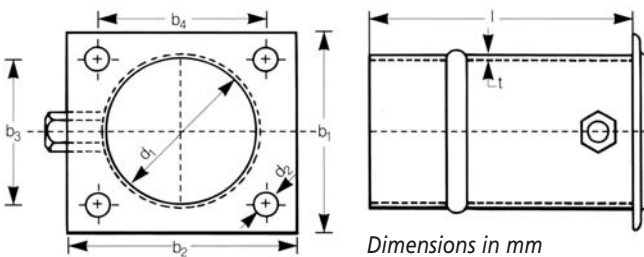
Ref	Application
EAKT 1605	3 core cable to 95mm <sup>2</sup>
EAKT 1606	3 core cable to 300mm <sup>2</sup>
EAKT 1607	EAKT 1606 plus insulating plate
EAKT 1608	Single core AWA cable to 630mm <sup>2</sup>
SFK 445*	Dual fixing X gland
1605 /8INS*	Insulating plate for EAKT1605/8



\* Non Raychem items.

NOTE: The use of extension glands can add 150mm to the distance between the bushing stud and the effective bottom plate of the cable box.

The gland is made to match stud spacing to BS 2562. Glands are available with an insulating plate where an earth fault indicator C.T. is required and in aluminium (size X only) for single core applications.



Raychem cable box gland dimensions.

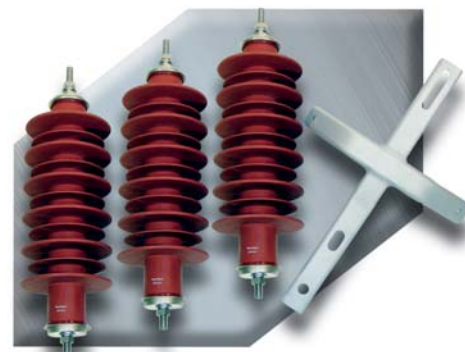
	b <sub>1</sub>	b <sub>2</sub>	b <sub>3</sub>	b <sub>4</sub>	d <sub>1</sub>	d <sub>2</sub>	l	t
Size X	90	90	66	66	68	11	140	1
Size Y	115	125	86	95	97	15	150	1.5

## Support Bracket & Insulators

For up to 36kV.

Pole mounted termination.

Set of three, red, non-tracking, flexible polymeric sheds mounted on a porcelain core along with a galvanised steel T-bracket.



Part Number	Description
EAKT 1521	Support bracket and insulators up to 12kV (heavy pollution), 24kV (light pollution)
EAKT 1524	Support bracket and insulators up to 36kV (heavy pollution)



## 3M Cold Shrink System

### QT111 Terminations

*One piece silicone rubber.*



#### 6.6kV / 11kV

Indoor, Single Core, Polymeric, Copper Tape Screen, Lead Sheaths and/or Aluminium Wire Armoured.

Kit Ref	Cable Range mm <sup>2</sup>
92-EP623-1	50 - 95
92-EP633-1	120 - 150
92-EP643-1	185 - 400
92-EP653-1	500 - 630

Indoor, Three Core, Polymeric, Copper Tape Screen/Armoured.

Kit Ref	Cable Range mm <sup>2</sup>
7621 - T95-3W	16 - 50
7623 - T95-3W	70 - 120
7624 - T95-3W	150 - 300

Indoor, 11kV, Single Core, Polymeric, Copper Wire Screen.

Kit Ref	Cable Range mm <sup>2</sup>
92-EP621-1	50 - 95
92-EP631-1	120 - 400
92-EP641-1	500 - 630
92-EP651-1	630 - 1000

Outdoor, Single Core, Polymeric, Copper Tape Screen, Lead Sheaths and/or Aluminium Wire Armoured.

Kit Ref	Cable Range mm <sup>2</sup>
92-EP623-2	50 - 95
92-EP633-2	120 - 150
92-EP643-2	185 - 400
92-EP653-2	500 - 630

Outdoor, Three Core, Polymeric, Copper Tape Screen/Armoured.

Kit Ref	Cable Range mm <sup>2</sup>
7691 - S4-3W	16 - 50
7692 - S4-3W	70 - 120
7693 - S4-3W	150 - 300

Outdoor, 11kV, Single Core, Polymeric, Copper Wire Screen.

Kit Ref	Cable Range mm <sup>2</sup>
92-EP621-2	50 - 95
92-EP631-2	120 - 400
92-EP641-2	500 - 630

#### 19kV / 33 (36) kV

Indoor/Outdoor, 33kV, Single Core, Polymeric, Copper Wire Screen.

Kit Ref	Cable Range mm <sup>2</sup>
94-EP610-2	35 - 120
94-EP620-2	50 - 150
94-EP630-2	120 - 300
94-EP640-2	240 - 630

Indoor/Outdoor, Single Core, Polymeric, Copper Tape Screen, For Mechanical Connectors.

Kit Ref	Cable Range mm <sup>2</sup>
94-EP611-2	25 - 120
94-EP621-2	70 - 240
94-EP631-2	185 - 400
94-EP641-2	400 - 630

Indoor/Outdoor, 33kV, Single Core, Polymeric, Copper Wire Screen, Aluminium Wire Armoured.

Kit Ref	Cable Range mm <sup>2</sup>
94-EP612-2	50 - 120
94-EP622-2	70 - 240
94-EP632-2	185 - 400
94-EP640-2	400 - 630

24kV / 52kV and 72kV versions available.





## 3M Termination Accessories

### 3M Cold Applied Barrier Boots 11kV

*Inline - Part Number MB63.*



### 3M Cold Applied 'Flexy' Barrier Boots

*Inline/Right Angle - Part Number 92-EE717-1.*

### 3M Cable Box Extension Glands

*With cold applied protection sleeve.*



Part Number	Diameter Range (mm)
THG1	36 - 65mm
THG2	53 - 94mm

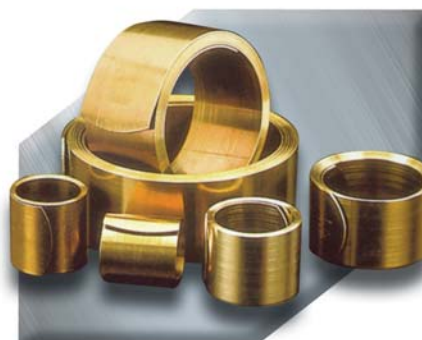
### 3M 11kV Earthbonding Kit

Part Number	Application	Rating
SBT1	11kV Paper Cable 95 - 185	3kV / 3 Seconds
SBT2	11kV Paper Cable 95 - 185	7kV / 3 Seconds
SBT3	11kV Paper Cable 95 - 185	13.1kV / 3 Seconds
SBT4	11kV Paper Cable 240 - 400	3kV / 3 Seconds
SBT5	11kV Paper Cable 240 - 400	7kV / 3 Seconds
SBT6	11kV Paper Cable 240 - 400	13.1kV / 3 Seconds



### 3M Constant Force Springs

Ref	Minimum Diameter (mm)	Maximum Diameter (mm)
CFS 59	4.0	10.0
CFS 60	9.0	15.0
CFS 61	14.0	22.0
CFS 62	18.5	29.0
CFS 63	23.5	37.0
CFS 64	31.0	50.0
CFS 65	44.0	70.0
CFS 66	58.0	94.0





# PFISTERER

## MV-CONNEX 10kV to 52kV

The MV-CONNEX range is typically used in ring main units, circuit breaker switchgear, high voltage motors, transformers, capacitors, transducers and sealing boxes. The plug is suitable for all kinds of insulated plastic cables. In addition to the standard plug and socket combination, there are many other versions for testing purposes and special applications.



### CONNEX MV and HV Range Technical Data

SIZE	0	1	1	2	2	3	3	3S	3S	4	5S	6	6S
With Voltage Tap			■		■		■	■					
Max. Operating Voltage $U_m$ (kV)	24	36	36	42	42	42	42	52	52	72.5	145	170	245
Nominal Current $I_N$ (A)	250	630	630	800	800	1250	1250	1250	1250	2500	2500	2500	2500
Min. Cross Section (mm <sup>2</sup> )	25	25	25	25	25	50	50	50	50	95	95	240	240
Min. Conductor $\varnothing$ (mm)	5.6	4.9	4.9	4.9	4.9	7.2	7.2	7.2	7.2	9.3	9.3	15.3	15.3
Max. Cross Section (mm <sup>2</sup> )	70	240	240	325*	325*	630*	630*	630*	630*	1600	1600	2000	2000
Max. Conductor $\varnothing$ (mm)	11.9	20.1	20.1	22.3	22.3	34.6	34.6	34.6	34.6	50.4	50.4	58.4	58.4
Min. $\varnothing$ Over Insulation (mm)	12.7	13.5	13.5	13.5	13.5	15.5	15.5	15.5	46.0	33.0	36.0	53.0	53.0
Max. $\varnothing$ Over Insulation (mm)	23.5	36.0	31.5	40.0	36.0	50.0	46.0	46.0	50.0	71.0	76.0	110.0	110.0
Rated Power Frequency Withstand Voltage 50 Hz/5 min. (kV)	50	70	70	95	95	95	95	117	117	140	275	325	460
Rated Lightning Impulse 1,2/50 $\mu$ s (kV) Withstand Voltage	125	170	170	200	200	200	200	250	250	325	650	750	1050
Partial Discharge 2 x $U_0$ (pC)	$\leq 10$	$\leq 10$	$\leq 10$	$\leq 10$	$\leq 10$	$\leq 10$	$\leq 10$	$\leq 10$	$\leq 10$	$\leq 2$	$\leq 2$	$\leq 2$	$\leq 2$
D.C Voltage Test 15min 6x $U_0$ (kV)	72	108	108	125	125	125	125	156	156	144	304	348	508
Rated Short-time Withstand Current													
0,5 sec (kA)	-	50	50	50	50	63	63	63	63	63	63	63	63
1 sec (kA)	16	31.5	31.5	40	40	50	50	50	50	50	50	50	50
Rated impulse current (kA)	40	125	125	125	125	150	150	150	150	160	160	160	160

\* bigger cable cross sections on request

# PFISTERER

Other Pfisterer products available including HV-CONNEX, SICON mechanical connectors, etc.

To enable us to quote for your requirements, please provide your cable specification.

Installation tooling available for sale or hire.





## Raychem Screened Separable Connector System - RSTI-58 800amp up to 24kV

Raychem RSTI-58 screened separable connectors are designed to connect single and three core polymeric cables to medium voltage gas insulated switchgear and other equipment using CENELEC bushing type 'C' specified for 630 / 1250amp up to 24kV.



### Screened Separable Connection System with Mechanical Lugs and Shear Bolts

Cross Section (mm <sup>2</sup> )	12kV Core Insulation Diameter		Reference
	Min (mm)	Max (mm)	
35 - 95	12.7	25.0	RSTI-5851
95 - 120	12.7	25.0	RSTI-5852
95 - 240	17.0	32.6	RSTI-5853
150 - 240	21.3	34.6	RSTI-5854
185 - 300	21.3	34.6	RSTI-5855

Cross Section (mm <sup>2</sup> )	24kV Core Insulation Diameter		Reference
	Min (mm)	Max (mm)	
35 - 70	12.7	25.0	RSTI-5851
95 - 185	17.0	32.6	RSTI-5853
95 - 240	21.3	34.6	RSTI-5854
185 - 300	21.3	34.6	RSTI-5855

**RSTI-58** Using DIN compression lugs to cover the same range also available.

**RSTI-CC-58** Screened separable coupling system to make double connections, single core branch-offs and disconnectable joints also available.

**RSTI** Screened separable connectors are also available for 630amps up to 36 (42)kV and up to 630mm<sup>2</sup>.

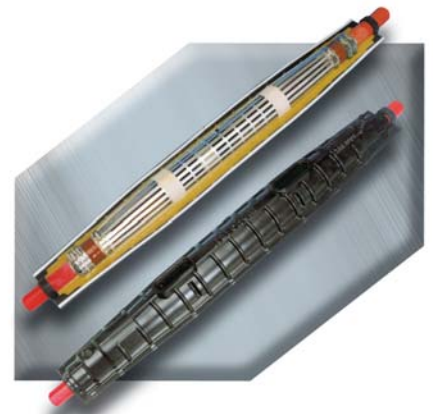
Contact your Cable Services sales office for more information.





## 11kV Shrink Set Resin Filled Joints

*Universal straight and transition joints for 3 core and polymeric cable.*



### Straight Joints

Reference	Conductor Size mm <sup>2</sup>	Resin Volume (litre approx)
SHSS-12A-IND	70 - 185*	14
SHSS-12B-IND	185 - 300*	28

### Branch Joints

Reference	Conductor Size mm <sup>2</sup>	Resin Volume (litre approx)
SMOE 61987	95 - 185*	42
SMOE 61988	185 - 300*	48

### Universal Pot End

Reference	Conductor Size mm <sup>2</sup>	Resin Volume (litre approx)
SMOE 62668	95 - 300	14

These joints are designed for use with mechanical shear bolt connectors which are included in the kit. See page 8 for details of the connectors.

Tyco recommend the use of a holding tool with mechanical shear bolt connectors.

### \*Build Up Kit

For conductor sizes smaller than the sizes quoted, a build up kit is required.

Reference	Conductor Size mm <sup>2</sup>	
BU1	16 - 50	for SHSS12A-IND and SMOE 61987
BU2	95 - 150	for SHSS12B-IND and SMOE 61988







## MXSU

11kV and 33kV heat shrink straight joints for single core non-armoured polymeric cables with mechanical connectors.



### 11kV

Reference	Conductor Size mm <sup>2</sup>
MXSU3111	25 - 95
MXSU3121	70 - 150
MXSU3131	95 - 240
MXSU3132	150 - 300
MXSU3141	240 - 400
MXSU3151	500
MXSU3161	630

### 33kV

Reference	Conductor Size mm <sup>2</sup>
MXSU6111	35 - 95
MXSU6121	70 - 150
MXSU6131	150 - 300
MXSU6141	240 - 400
MXSU6151	500
MXSU6161	630

**NOTE:** Due to differing conductor constructions in conjunction with mechanical connectors, the application range may occasionally vary.

## SXSU

11kV and 33kV heat shrink straight joints for single core non-armoured polymeric cables without connectors.

### 11kV

Reference	Conductor Size mm <sup>2</sup>
SXSU3111	35 - 70
SXSU3121	95 - 185
SXSU3131	185 - 300
SXSU3141	300 - 500
SXSU4141*	400 - 630
SXSU4151*	800 - 1000

### 33kV

Reference	Conductor Size mm <sup>2</sup>
SXSU6122	35 - 150
SXSU6162	150 - 300
SXSU6142	400 - 630
SXSU6151	500 - 800
SXSU6161	800 - 1200

\*Use crimp connectors



## SXAW

*11kV and 33kV heat shrink straight joints single core, aluminium wire armoured polymeric cables without connectors.*



### 11kV

Reference	Conductor Size mm <sup>2</sup>
SXAW3121	95 - 185
SXAW3131	185 - 300
SXAW3141	400 - 500
SXAW3151	630 - 800

### 33kV

Reference	Conductor Size mm <sup>2</sup>
SXAW6122	50 - 95
SXAW6132	120 - 240
SXAW6142	300 - 630

## CSJA 'All In One' (Cold Applied)

*11kV and 33kV Cold Applied straight joints single core, non-armoured polymeric cables with mechanical connectors.*



### 11kV

Reference	Conductor Size mm <sup>2</sup>
CSJA-12B / IXU-IXU-M	95 - 240
CSJA-12C / IXU-IXU-M	185 - 300
CSJA-12D / IXU-IXU-M	240 - 400
CSJA-12E / IXU-IXU-M1	500
CSJA-12E / IXU-IXU-M2	630

### 33kV

Reference	Conductor Size mm <sup>2</sup>
CSJA-36D / IXU-IXU-M	95 - 240
CSJA-36E / IXU-IXU-M1	240 - 400
CSJA-36E / IXU-IXU-M2	500
CSJA-36E / IXU-IXU-M3	630

**NOTE:** The application range is based on standard circular conductors to IEC60502. Scottish Power approved COLD APPLIED 33kV Single Core Polymeric Joints available.



## EPKJ

The EPKJ range of heat shrink non-resin joints allows for many combinations of paper and polymeric transition and trifurcating joints at 11kV and 33kV. The most frequently requested are described below. Contact our sales office if the joint required isn't listed.



Connectors not included.

### 33kV 3 Core Polymeric to Polymeric Armoured Cable

Reference	Conductor Size mm <sup>2</sup>
EPKJ 36A-3XU-3XU-W	50 - 70
EPKJ 36B-3XU-3XU-W	95 - 150
EPKJ 36C-3XU-3XU-W	185 - 400

### 33kV Single Core Paper to Polymeric Non-Armoured Cable

Reference	Conductor Size mm <sup>2</sup>
EPKJ 36A-IXU-IHL	50 - 70
EPKJ 36B-IXU-IHL	95 - 150
EPKJ 36C-IXU-IHL	185 - 400
EPKJ 36D-IXU-IHL	500 - 630

### 33kV 3 Core Paper to Paper Armoured Cable

Reference	Conductor Size mm <sup>2</sup>
EPKJ 36A-3SB-3SB-W	50 - 70
EPKJ 36B-3SB-3SB-W	95 - 150
EPKJ 36C-3SB-3SB-W	185 - 400

### 33kV Single Core Paper to Paper Non-Armoured Cable

Reference	Conductor Size mm <sup>2</sup>
EPKJ 36A-1HL-1HL	50 - 70
EPKJ 36B-1HL-1HL	95 - 150
EPKJ 36C-1HL-1HL	185 - 400
EPKJ 36D-1HL-1HL	500 - 630

### 11kV Single Core Paper to Polymeric Non-Armoured Cable

Reference	Conductor Size mm <sup>2</sup>
EPKJ 17A-IXU-IHL	35 - 70
EPKJ 17B-IXU-IHL	95 - 185
EPKJ 17C-IXU-IHL	240 - 400
EPKJ 17D-IXU-IHL	500 - 630

### 11kV Single Core Paper to Paper Non-Armoured Cable

Reference	Conductor Size mm <sup>2</sup>
EPKJ 17A-1HL-1HL	35 - 70
EPKJ 17B-1HL-1HL	95 - 185
EPKJ 17C-1HL-1HL	240 - 400
EPKJ 17D-1HL-1HL	500 - 630



## Cold Shrink System - 6.6 / 11kV

### QS1000

- One piece cold shrink joint body.
- 100% tested after manufacture.
- Suitable for paper and polymeric cables.



## Single Core Polymeric - Copper Wire Screen / Copper Tape Screen

Conductor Size mm <sup>2</sup>	Diameter Over Primary Insulation (mm)	Copper Wire Screen Kit Reference	Copper Tape Screen Kit Reference
70 - 150	17.7 - 26.0	92-AG 611-1	92-AG 612-1
185 - 240	22.3 - 33.2	92-AG 621-1	92-AG 622-1
300 - 400	28.4 - 42.0	92-AG 631-1	92-AG 632-1

## Three Core Polymeric/Belted Paper (PILC, PICAS) Transition, Lead Sheaths and/or Armoured (select basic joint, then add additional items as appropriate)

Conductor Size mm <sup>2</sup>	Diameter Over Primary Insulation (mm)	Kit Reference	Supplementary Kit For PILC	Supplementary Kit For Transition Joint
70 - 120	17.7 - 26.0	92-AV 610-3	Qty2 x PILC1	PILC1
150 - 185	22.3 - 33.2	92-AV 620-3	Qty2 x PILC2	PILC2
300 - 400	28.4 - 42.0	92-AV 630-3	Qty2 x PILC3	PILC3

## Outer Protection Selection for 92-AV Joints Above

(either Cold Shrink or Mould and Resin)

Joint	Cold Shrink Reference	Mould	Resin Volume	Resin
92-AV 610-3	CS 610-3	1451	14 Litres	10 x 1600g Packs #1471*
92-AV 620-3	CS 620-3	1451	14 Litres	10 x 1600g Packs #1471*
92-AV 630-3	CS 630-3	1452	21 Litres	14 x 1600g Packs #1471*

\* #1400U Hazardous area resin option available

## Three Core Trifurcating / Transition 3 Core Belted PILC / PICAS to 3 Single Polymeric

Conductor Size mm <sup>2</sup>	Diameter Over Primary Insulation (mm)	Kit Reference	Resin Volume	Resin
50 - 95	17.7 - 26.0	92-FV 611-3	14.5 Litres	10 x 1600g Packs #1471*
120 - 240	22.3 - 33.2	92-FV 621-3	14.5 Litres	10 x 1600g Packs #1471*
300 - 400	28.4 - 42.0	92-FV 631-3	14.5 Litres	10 x 1600g Packs #1471*

\* #1400U Hazardous area resin option available





## Cold Shrink System - 6.6 / 11kV

### Three Core Trifurcating - 3 Core Polymeric, Copper Tape Screen, Armoured to Single Core Polymeric

Conductor Size mm <sup>2</sup>	Kit Reference
50 - 95	92-MV 610-3
120 - 185	92-MV 620-3

### Cold Shrink Single Core Polymeric Cable Build Up Supplementary Kit

Select in conjunction with an QS1000 joint kit for polymeric cable, when one or both the conductors to be joined fall below the minimum range for the joint.

Conductor Size mm <sup>2</sup>	Insulation Diameter mm	Build Up Kit Reference (Polymeric Only)
25 - 50	13.7 - 20.4	92-PG 610-1
70 - 150	17.7 - 24.2	92-PG 620-1
150 - 240	22.3 - 31.0	92-PG 630-1

Note: These are single phase kits, one is required for each phase to be joined that falls below the minimum range of the joint.

### Mechanical Earthing System

Conductor Size mm <sup>2</sup>	Insulation Diameter mm	Kit Reference
up to 35	PILC	MEH V0
50 - 95	PILC	MEH V1
120 - 300	PILC	MEH V2
up to 95	PICAS	MEH V3
120 - 300	PICAS	MEH V4

## 6.6 / 11 / 24 and 33kV

### Using the 3M QS2000 and QS111 Cold Shrink Joint Bodies

3M cold shrink solutions are available for:

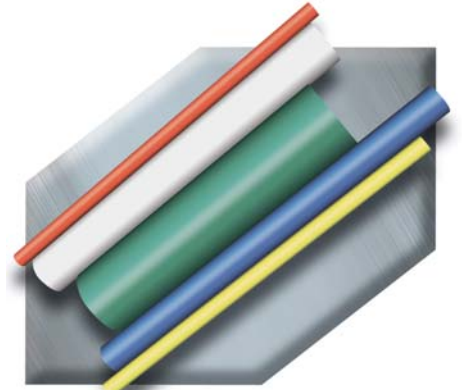
- Single core branch - XLPE / copper wire screened up to 24kV.
- Single core for polymeric, copper wire screened 12 / 24 and 36kV.
- 3 core for polymeric, copper tape screen, armoured 36kV.
- Single core transition for polymeric to paper MIND cables 36kV.
- trifurcating / Transition for single core XLPE to 3 core PILC 36kV (mould & resin).
- Single core for polymeric copper wire screen up to 52kV.

Consult our sales office for guidance.

## CGPT

*General purpose, flame retardant, thin wall heat shrink sleeve.*

CGPT is a tough, flexible, general purpose polyolefin tubing with good resistance to common fluids and solvents and a high electrical strength. Available cut to length in most common sizes and electrical colours including green/yellow.



- Shrink ratio 2 to 1.

### Standard Stock Sizes and Spool Lengths

Reference	Diameter (mm) Before Recovery	Diameter (mm) After Recovery	Spool Length (mm)
CGPT 3.2 / 1.6 Colour	3.2	1.6	150
CGPT 6.4 / 3.2 Colour	6.4	3.2	75
CGPT 9.5 / 4.8 Colour	9.5	4.8	121 (75 - Green / Yellow)
CGPT 12.7 / 6.4 Colour	12.7	6.4	91 (75 - Green / Yellow)
CGPT 19 / 9.5 Colour	19.0	9.5	60 (75 - Green / Yellow)
CGPT 25.4 / 12.7 Colour	25.4	12.7	60 (30 - Green / Yellow)
CGPT 38 / 19 Colour	38	19	30
CGPT 51 / 26 Colour	51	26	30

## MWTM

*Medium wall thickness adhesive coated tubing.*

MWTM is in wide use in low voltage cable joints and terminations. The wide shrink ratio makes it particularly useful for cable repairs. MWTM is normally supplied with an inner adhesive wall which melts during installation. Uncoated tubing is available.



### Standard Stock Sizes

Reference (1500 mm Length)	Diameter (mm) Before Recovery	Diameter (mm) After Recovery
MWTM 10/3 - 1500/S	10	3
MWTM 16/5 - 1500/S	16	5
MWTM 25/8 - 1500/S	25	8
MWTM 35/12 - 1500/S	35	12
MWTM 50/16 - 1500/S	50	16
MWTM 63/19 - 1500/S	63	19
MWTM 75/22 - 1500/S	75	22
MWTM 115/34 - 1500/S	115	34



## Cable End Caps

Product Reference	Diameter Range (mm)
102L011 - 37 / S	4 - 8
102L022 - 37 / S	8 - 17
102L033 - 37 / S	17 - 30
102L044 - 37 / S	30 - 45
102L048 - 37 / S	45 - 65
102L055 - 37 / S	65 - 95
102L066 - 37 / S	95 - 115



## 1kV Cable Breakouts

No. Of Cores	Product Reference	Conductor Size Range (mm <sup>2</sup> )
2	302K333 - 53 / S	4 - 25
2	302K224 - 53 / S	35 - 150
2	302K466 - 53 / S	185 - 300
3	402W533 - 53 / S	4 - 35
3	402W516 - 53 / S	50 - 150
3	402W526 - 53 / S	185 - 300
4	502K033 - 53 / S	4 - 35
4	502K046 - 53 / S	35 - 70
4	502K016 - 53 / S	70 - 150
4	502K026 - 53 / S	185 - 300



## Wrap Around Sheath Repairs

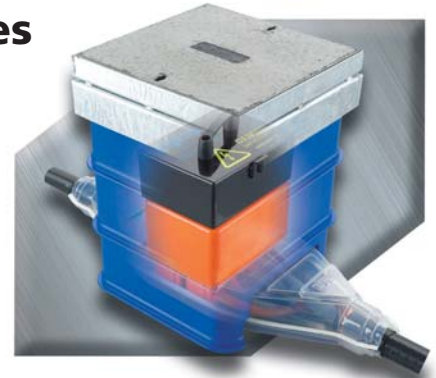
Product Reference	Diameter Range (mm)
CRSM 34 / 10	12 - 21
CRSM 53 / 13	15 - 32
CRSM 84 / 20	23 - 50
CRSM 107 / 29	34 - 65
CRSM 143 / 36	42 - 86
CRSM 198 / 55	62 - 120
CRSM 250 / 98	111 - 150



The standard length of CRSM is 1500mm and can be cut using a sharp knife.

## Low Voltage 2 and 4 Way Link Boxes

Modular link box body kit in 2 and 4 way configurations, accepts most LV cables including CNE (95mm<sup>2</sup> - 300mm<sup>2</sup>) and those with full sized sectoral neutral / earth conductors. Snap fit terminal cover permits on site single resin casting with live connections. Complete kit includes casting shell assembly, cable setting jig, electrical connections, wedge links, diving bell lid, toolbox, pit enclosure, galvanised frame and cover.



Reference	Description	Weight
1700 / UK	Standard 2-way / 3-core UK Link Box	48kg
1701 / UK	Standard 4-way / 3-core UK Link Box	125kg
1702 / UK	Multicable* 2-way / 3-core UK Link Box	49kg
1703 / UK	Multicable* 4-way / 3-core UK Link Box	127kg

\* Multicable means PILC / Polymeric SWA etc

- Modular design reduces weight and space required for link box positioning, making installation simpler in congested areas whilst reducing excavation and reinstatement costs.
- Patented modular assembly integrates single resin casting, snap fit terminal cover, diving bell lid and pit enclosure.
- Supplied with a full set of 82.5mm wedge links (3 links with two way box and 12 links with 4 way box).
- Unique injection moulded tool box combines the function of hiding the diving bell lid and storing out-of-service links with the bright yellow "Danger Live Electrical Apparatus" warning.
- Cast iron diving bell lid with integrated moisture run-off and release system provides link box integrity for up to 2m head of water at 10° installation angle.
- Modular pit enclosure frame comes in 150mm deep sections to eliminate the need for brick construction and to accommodate varying cable depths.
- All internal connections made with standard Tyco tested components (UET and BTCNE connectors) featuring mechanical shear torque controlled technology to ensure accurate assembly and reliable electrical performance.
- Cable core setting jig allows accurate conductor alignment before positioning the link box body, permitting easy access to cables and enabling better electrical connections.
- Clear vacuum-formed body shell allows easy cable installation and inspection prior to resin fill. Shell designed for crossing 300mm<sup>2</sup> cores with sufficient resin coverage.
- Single resin casting eliminates moisture tracking and moisture ingress problems resulting from multiple castings and reduces installation time and volume of resin required.
- Pit cover is housed in a galvanised metal frame and has 100mm of movement to accommodate uneven surfaces. Cover can be supplied with or without concrete fill to allow customising on site to match surface finishes.



## Sicame Low Voltage Link Boxes

### LVD / FLB / 2 / 3C

Low voltage 2 way Underground Link Box (Insulated), 800amp rated for 70 - 300mm<sup>2</sup>, 3 core CNE cable.



- All insulated 2 way link box complete with height adjustable Grade B (12½ ton) pavement access assembly.
- High density polythene (HDPE) pavement access chamber supplied as standard eliminating the need for brick built construction.
- Factory assembled and insulated turret will accommodate solid or fused (83mm centres) links to BS88.
- Traditional cast iron bell cover for reliable protection against water ingress (1 metre head).
- Provision of approved neutral test facility and also generation / fault location connection point within the insulated turrets.
- All the required phase and neutral / earth mechanical connectors are factory fitted and utilise shear-head bolt technology to ensure consistent and reliable performance.
- All necessary sealing accessories are provided for the encapsulation of the joint - resin is supplied as an extra (30 litres required).

### Extras

Reference	Description
LVD / FLB / 2 / CK	4 Core Cable Conversion Kit
LVD / FLB / 4 / EK	External Earth - 70mm <sup>2</sup> Earth Band Assembly
50097	Fuse Carrier
50093	Solid Links

Other specifications of LV Link Boxes available.

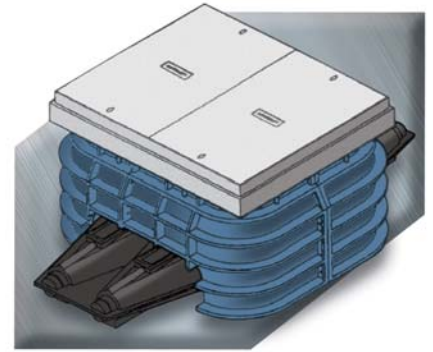




## Sicame Low Voltage Link Boxes

**LVD / FLB / 4 / 3C**

Low voltage 4 way Underground Link Box (Insulated), 800amp rated for 70 - 300mm<sup>2</sup>, 3 core CNE cable.



- All insulated 4 way link box complete with height adjustment Grade B (12½ ton) pavement access assembly.
- High density polythene (HDPE) pavement access chamber supplied as standard eliminating the need for brick built construction.
- Factory assembled and insulated turret will accommodate solid or fused (83mm centres) links to BS88.
- Traditional insulated cast iron bell cover for reliable protection against water ingress (1 metre head).
- Provision of approved neutral test facility and also generation / fault location connection point within the insulated turrets.
- All the required phase and neutral / earth mechanical connectors are factory fitted and utilise shear-head bolt technology to ensure consistent and reliable performance.
- All necessary sealing accessories are provided for the encapsulation of the joint (60 litres required).

### Extras

Reference	Description
LVD / FLB / 4 / CK	4 Core Cable Conversion Kit
LVD / FLB / 4 / EK	External Earth - 70mm <sup>2</sup> Earth Band Assembly
50097	Fuse Carrier
50093	Solid Links

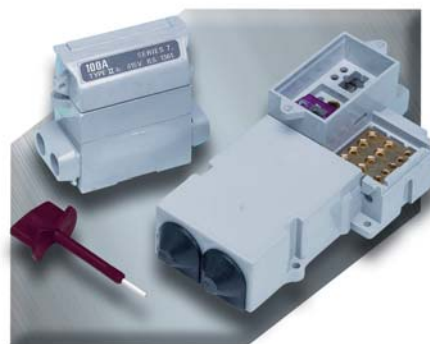
Other specifications of LV Link Boxes available.





## House Service Cut Outs WT Henley - Series 7

Henley Series 7 range of House Service Cut Outs for combined neutral and earth (CNE) cables.



The range consists of:

- Standard single pole (SP ) cut out.
- Standard single pole and neutral / earth (SP & N/E) cut out.
- Close coupled SP & N/E cut out with industry standard meter entry port interface.
- Protection chambers for SP & N/E and to & N/E versions.
- Insulated busbar for simple connection of a second SP cut out / service.
- Fuse carriers rated at 60/80A or 100A.
- SP & N/E isolator - denoted by red fuse carrier - replaces fuse with solid link.

Description	Product Code	
	60 / 80A	100A
Single Pole Cut Out	54131-04	54132-04
Single Pole & Neutral ( <i>with combined neutral earth</i> )	54137-04	54138-12
<b>Close Coupled Design</b>		
Single Pole & Neutral ( <i>with combined neutral earth</i> )	54137-04	54138-05
<b>Protection Chamber (<i>with 2 PVC Bushes &amp; Blank Entries</i>)</b>		
For Single Pole & Neutral and Earth Set	54315-06	
For Triple Pole & Neutral and Earth Set	54315-49	
<b>Accessories &amp; Spares</b>		
Insulated Busbar	54382-01	
Fuse Carrier	60/80A 54365-04	100A 54365-22
Insulated Hexagon Headed Screwdriver / Pin&Plug Remover	53485-36	
Solid Link In Red Carrier ( <i>used in place of fuse-link</i> )	54365-08	
Fuselink To Suit 60 / 80A Carrier - BS 1361 16 x 22 x 57mm		
	30A 58332-04	60A 58333-07
	80A 58334-08	100A 58334-09
Fuselink To Suit 100A Carrier - BS 1361 16 x 30 x 57mm		
	30A 58332-06	60A 58333-11
	80A 58334-04	100A 58334-06
<b>Isolator</b>		
Single Pole and Neutral & Earth ( <i>fitted with red solid link carrier</i> )	54361-05	
<b>Maximum Cable Sizes</b>		
Phase and Neutral ( <i>incoming and outgoing</i> )	35mm <sup>2</sup>	
Earth	25mm <sup>2</sup>	
Time Switch	10mm <sup>2</sup>	

**Note:** For triple-pole-and-neutral and single-pole-and-neutral sets, the cut-outs and protection chambers are supplied as separate items for on site assembly.



## House Service Cut Outs WT Henley - Series 6

Henley Series 6 range of House Service Cut Outs for separate neutral and earth (CNE) cables.

The range consists of:

- Standard single pole (SP ) cut out and a single pole and neutral & earth model.
- The cuts outs may be combined to form triple pole sets.
- All models are rated to 100Amps.
- Red coloured solid link version available as an alternative to a fused link.
- Suitable for copper or aluminium cables to to 35mm<sup>2</sup>.



Description	Product Code	
	60 / 80A	100A
Single Pole Cut Out	54141-03	54142-07
Single Pole & Neutral <i>(with separate earth terminal &amp; CNE link in open position)</i>	54143-08	54144-04

	Protection Chamber <i>(with 2 PVC Bushes &amp; Blank Entries)</i>	
For Single Pole & Neutral and Earth Set	54317-01	
For Triple Pole & Neutral and Earth Set	54318-02	

	Accessories & Spares	
2 Way Busbar	54382-85	
3 Way Busbar	54382-41	
Fuse Carrier	60/80A 54365-10	100A 54365-13
Insulated Hexagon Headed Screwdriver	53485-36	
Solid Link In Red Carrier <i>(used in place of fuse-link)</i>	54365-05	

Fuselink To Suit 60 / 80A Carrier - BS 1361 16 x 22 x 57mm	30A 58332-04	60A 58333-07
	80A 58334-08	100A 58334-09

Fuselink To Suit 100A Carrier - BS 1361 16 x 30 x 57mm	30A 58332-06	60A 58333-11
	80A 58334-04	100A 58334-06

	Isolator
Single Pole and Neutral & Earth <i>(fitted with red solid link carrier)</i>	54361-01

	Maximum Cable Sizes
Phase and Neutral <i>(incoming and outgoing)</i>	35mm <sup>2</sup>
Earth	25mm <sup>2</sup>
Time Switch	10mm <sup>2</sup>

**Note:** For triple-pole-and-neutral and single-pole-and-neutral sets, the cut-outs and protection chambers are supplied as separate items for on site assembly.





## House Service Cut Outs

- Accepts fuse links to BS1361 maximum rating - TYPE IIa fuse 60/80amp / TYPE IIb fuse 100amp.
- Tested and approved to EA12-10 / BS7657.
- Solid brass terminal blocks with serrated bores and two screws per conductor.
- Accepts conductors up to 35mm<sup>2</sup>
- Moulded in light grey glass reinforced polyester DMC thermoset material.
- Busbar facility to interconnect cut outs.



### Single Pole House Service Cut Out

Ref Code	Description	
SP 100	Single Pole	100amp max
SP 60 / 80	Single Pole	80amp max

*Can be used in conjunction with CNE cut out to form TPNE set*

### Single Pole, Separate Neutral & Earth House Service Cut Out

Ref Code	Description	
SPNE 60 / 80	SP / N&E Cut Out	80amp max
SPNE 100	SP / N&E Cut Out	100amp max
SPNECC	Cable Cover for the above	

### Triple Pole, Separate Neutral & Earth House Service Cut Out

Ref Code	Description	
TPNE 60 / 80	TP/N Cut Out	80amp max
TPNE 100	TP/N Cut Out	100amp max
TPNECC	Cable Cover for the above	

### Single Pole, Combined Neutral & Earth House Service Cut Out

Ref Code	Description	
SPN 60 / 80	SP & NE Cut Out	80amp max
SPN 100	SP & NE Cut Out	100amp max
SPNCC	Cable Cover for the above	

### Triple Pole, Combined Neutral & Earth House Service Cut Out

Ref Code	Description	
TPN 60 / 80	TP/N Cut Out	80amp max
TPN 100	TP/N Cut Out	100amp max
TPNCC	Cable Cover for the above	



## Multiway Service & Rising Main Distribution Boards

### MSDB7 and MSDB10

Manufactured in glass reinforced polyester and fitted with either 7 or 10 Lucy EA12-10 / BS7657 cut outs (maximum rating 100amp). Incoming cable maximum 185mm<sup>2</sup> / 35mm<sup>2</sup> maximum outgoing.



### MSDB24, MSDB30 & MSDB36

Manufactured in 2mm galvatite steel - epoxy painted. Fitted with either 24, 30 or 36 Lucy EA12-10 / BS7657 cut outs (maximum rating 100amp). Incoming cable maximum 185mm<sup>2</sup> / 35mm<sup>2</sup> maximum outgoing.



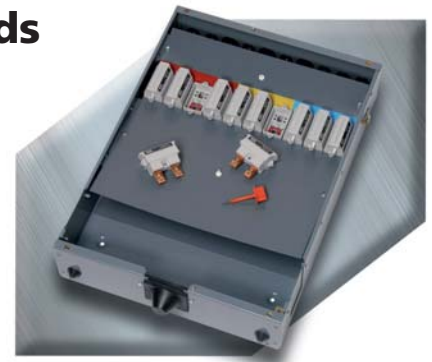
### MSDB16

Manufactured in 2mm galvatite steel - epoxy painted. Fitted with 16 Lucy EA12-10 / BS7657 cut outs (maximum rating 100amp). Incoming cable maximum 185mm<sup>2</sup> / 35mm<sup>2</sup> maximum outgoing.



### 55220 Series Multiway Service Heads

Manufactured from 1.6mm zinc coated steel and fitted with either 7, 10, 16 or 24 Henly Series 7 cut outs (maximum rating 100amp), 35mm<sup>2</sup> maximum outgoing cable size, suggested maximum incoming cable sizes 7/10way-120mm<sup>2</sup>, 16way-185mm<sup>2</sup>, 24way-300mm<sup>2</sup>.



Ref Code	Description	Dimensions (mm)
55221-37	7way 60/80amp	634 (L) x 390 (W) x 135 (D)
55221-63	7way 100amp	634 (L) x 390 (W) x 135 (D)
55222-30	10way 60/80amp	684 (L) x 528 (W) x 135 (D)
55222-69	10way 100amp	684 (L) x 528 (W) x 135 (D)
55223-20	16way 60/80amp	684 (L) x 804 (W) x 135 (D)
55223-53	16way 100amp	684 (L) x 804 (W) x 135 (D)
55224-02	24way 100amp	711 (L) x 1125 (W) x 121 (D)
55201-20	24way 60/80amp	711 (L) x 1125 (W) x 121 (D)



## Heavy Duty Cut Outs - GF400CN

- Lucy glass reinforced plastic 400amp cut out to Central Network approved specification 0620068009.
- Maximum cable size 185mm<sup>2</sup> (other versions and ratings available).



## Insulated Connector Boxes

**Type 1** - Single Pole model, manufactured from Phenolic. Block can accept up to a maximum of 4 conductors, copper only. Features include shrouded entries with knockouts protected by shields and slotted-headed pinching screws.

Ref Code	Rating	Number & Size of Conductors (mm <sup>2</sup> )		Approx. Dimensions (mm)			Terminal Screw Fitting	
		Minimum	Maximum	Length (Box Only)	Length (Inc Shield)	Width		Depth
54341-15	30amp	4 x 2.5	4 x 16	38	48	33	29	Slotted
54342-18	60amp	4 x 2.5	4 x 25	46	56	40	32	Slotted

**Type 2** - (BS7657 Type C1) Single Pole model, manufactured in glass reinforced polyester. Accepts up to 5 conductors, either copper or aluminium. Features include shrouded cable entries with knockouts and a choice of slotted or socket headed pinching screws. \*Separate adhesive earth label, branded 'E' lid alternative for earth conductors.

*All blocks have sharply serrated bores and flat bottomed pinching screws for stable contact on all conductor types.*

Ref Code	Rating	Number & Size of Conductors (mm <sup>2</sup> )		Approx. Dimensions (mm)			Terminal Screw Fitting
		Minimum	Maximum	Length	Width	Depth	
54347-37	100amp	5 x 2.5	5 x 35	78	54	35	Socket
54347-38	100amp	5 x 2.5	5 x 35	75	54	35	Slotted
54347-15*	100amp	5 x 2.5	5 x 35	75	54	35	Socket
54347-16*	100amp	5 x 2.5	5 x 35	75	54	35	Slotted

**Type 3** - Single Pole model, manufactured in glass reinforced polyester. Accepts up to 5 conductors, either copper or aluminium. Features include wood bush for top and bottom entry, slotted-headed pinching screws. Blocks have serrated bores and flat bottomed pinching screws.

Ref Code	Rating	Number & Size of Conductors (mm <sup>2</sup> )		Approx. Dimensions (mm)			Terminal Screw Fitting
		Minimum	Maximum	Length	Width	Depth	
54473-03	200amp	5 x 2.5	5 x 70	137	68	54	Slotted

**Type 4** - Single Pole & Neutral model, manufactured from glass reinforced polyester. Block can accept up to 5 conductors, copper only. Features include separate phase and neutral compartments; identification of neutral block, choice of socket or slotted headed pinching screws.

Ref Code	Rating	Number & Size of Conductors (mm <sup>2</sup> )		Approx. Dimensions (mm)			Terminal Screw Fitting
		Minimum	Maximum	Length	Width	Depth	
54344-03	100amp	5 x 2.5	5 x 25	52	93	48	Slotted
54344-04	100amp	& 2 x 2.5	& 2 x 16	52	93	48	Socket

All connector boxes are supplied with: (1) Fixing screws for wood or chipboard.  
 (2) Sealing tag/s (for types 1, 2 and 4 only).  
 (3) Sealing screws for lid fixing (type 3 only).

Lucy versions and uninsulated brass terminal blocks available.

## Scottish Power Approved Low Voltage Resin Filled Joints

### Features:

- Generous dimensions to accommodate modern mechanical connectors supplied with the kits.
- Clear and detailed drawing-based installation instructions.
- Mechanical connectors supplied requires no special tooling.
- Insulating piercing connectors incorporating on the mains service connections reduce cable preparation times.



### Standards: Connectors designed to:

- BS4579 Part 1 and Part 3.
- Engineering Recommendations C79.
- BS EN 61238-1.

### Resin filled joints & connectors type tested to:

- Engineering Recommendations C81/ BS7888:part3:1998.
- BS EN 50393:2006.

Kits currently available cover the popular polymeric applications and are as follows:

Kit Ref	SP Code	SP Kit Ref	Description	Resin Volume in Litres
TLNK-SE1-SP01	C12058000	01	Service stop-end for CNE single-phase cable 4-35mm <sup>2</sup> (without earth lead)	1.2
TLNK-SE1-SP02	C12058001	02	Service stop-end for single-phase SNE cable 4-35mm <sup>2</sup> (without earth lead)	1.2
TLNK-SE3-SP03	C12058002	03	Service stop-end for 3-phase CNE/Waveconal cable 16-35mm <sup>2</sup> (without earth lead)	2.2
TLNK-SE3-SP04	C12058003	04	Service stop-end for 3-phase SNE cable 16-35mm <sup>2</sup> (without earth lead)	2.2
TLNK-SS1-SP07	C12058010	07	Service straight joint for single-phase CNE/SNE cable 4-35mm <sup>2</sup>	2.6
TLNK-SS3-SP08	C12058011	08	Service straight joint for 3-phase CNE/SNE cable 16-35mm <sup>2</sup>	2.2
TLNK-SB1-SP11	C12058020	11	Cut/test/re-make or branch joint base kit for single-phase CNE/SNE service cable 4-35mm <sup>2</sup>	2.2
TLNK-SB3-SP12	C12058021	12	Cut/test/re-make or branch joint base kit for 3-phase CNE/SNE service cable 16-35mm <sup>2</sup>	5
TLNK-MSB-SP14	C12058040	14	Mains-service branch joint for 3-core waveform main 70-185mm <sup>2</sup> to up to 2 single-phase CNE/SNE service cable 4-35mm <sup>2</sup> (additional phase connectors required for 4-core and/or more than 2 service core connections)	10
TLNK-MSB-SP15	C12058041	15	Mains-service branch joint for 3-core waveform main 240-300mm <sup>2</sup> to up to 2 single-phase CNE/SNE service cable 4-35mm <sup>2</sup> (additional phase connectors required for 4-core and/or more than 2 service core connections)	16
TLNK-MMS-SP19	C12058050	19	Mains straight joint for 3-core waveform cable up to 95mm <sup>2</sup>	10
TLNK-MMS-SP20	C12058051	20	Mains straight joint for 3-core waveform cable up to 185mm <sup>2</sup>	15
TLNK-MMS-SP21	C12058052	21	Mains straight joint for 3-core waveform cable up to 300mm <sup>2</sup>	21.5
TLNK-MMS-SP22	C12058053	22	Mains straight joint for 4-core waveform cable up to 95mm <sup>2</sup>	10
TLNK-MMS-SP23	C12058054	23	Mains straight joint for 4-core waveform cable up to 185mm <sup>2</sup>	15
TLNK-MMS-SP24	C12058055	24	Mains straight joint for 4-core waveform cable up to 300mm <sup>2</sup>	21.5
TLNK-MMS-SP25	C12058056	25	Mains straight joint for 3-core to 4-core waveform cable up to 95mm <sup>2</sup>	10
TLNK-MMS-SP26	C12058057	26	Mains straight joint for 3-core to 4-core waveform cable up to 185mm <sup>2</sup>	15
TLNK-MMS-SP27	C12058058	27	Mains straight joint for 3-core to 4-core waveform cable up to 300mm <sup>2</sup>	21.5
TLNK-MMB-SP34	C12058070	34	Mains branch joint for 3-core waveform cable up to 95mm <sup>2</sup>	18
TLNK-MMB-SP35	C12058071	35	Mains branch joint for 3-core waveform cable up to 185mm <sup>2</sup>	24
TLNK-MMB-SP36	C12058072	36	Mains branch joint for 3-core waveform cable up to 300mm <sup>2</sup>	29
TLNK-MMB-SP37	C12058073	37	Mains branch joint for 4-core waveform cable up to 95mm <sup>2</sup>	18
TLNK-MMB-SP38	C12058074	38	Mains branch joint for 4-core waveform cable up to 185mm <sup>2</sup>	24
TLNK-MMB-SP39	C12058075	39	Mains branch joint for 4-core waveform cable up to 300mm <sup>2</sup>	29
TLNK-MMB-SP40	C12058076	40	Mains branch joint for 3-core waveform branch to 4-core waveform main up to 95mm <sup>2</sup>	18
TLNK-MMB-SP41	C12058077	41	Mains branch joint for 3-core waveform branch to 4-core waveform main up to 185mm <sup>2</sup>	24
TLNK-MMB-SP42	C12058078	42	Mains branch joint for 3-core waveform branch to 4-core waveform main up to 300mm <sup>2</sup>	29
TLNK-MSE-SP52	C12058093	52	Mains stop-end for 3-core waveform cable up to 95mm <sup>2</sup> with PME connector and earth lead	5
TLNK-MSE-SP53	C12058094	53	Mains stop-end for 3-core waveform cable up to 185-300mm <sup>2</sup> with PME connector & earth lead	7.2
TLNK-MSE-SP54	C12058095	54	Mains stop-end for 4-core waveform cable up to 95mm <sup>2</sup> with PME connector and earth lead	5
TLNK-MSE-SP55	C12058096	55	Mains stop-end for 4-core waveform cable up to 185-300mm <sup>2</sup> with PME connector & earth lead	7.2

### Please Note: Joint kits do not include resin

**NOTE:** Customers should satisfy themselves that they have Scottish Power approval to install these joints on the Scottish Power network. Other DNO approved versions of many of these joints are also stocked.





## Underground Cable Protection

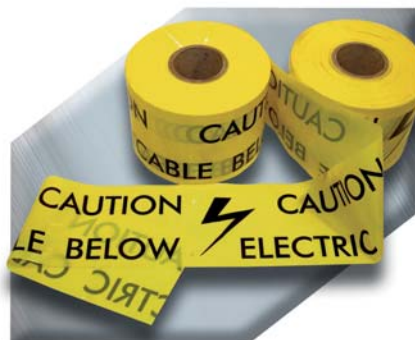
### Cable Marker Tape

Standard legend:

'CAUTION ELECTRIC CABLE BELOW'

Other legends available.

- Size 150mm (w) x 365m long roll.
- 50 or 100 micron.



### Heavy Duty Warning Tape

Manufactured from high impact recycled polyethylene.

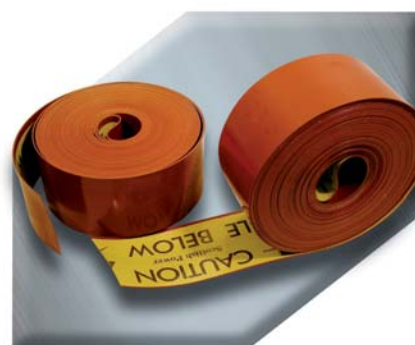
Standard Sizes

- **Centritile 150:** 40m x 150mm x 2.5mm (approximate weight 18kg per roll).
- **Centritile 200:** 40m x 200mm x 2.5mm (approximate weight 24kg per roll).

Standard legend:

'CAUTION ELECTRIC CABLE BELOW'

(Other legends available by special order).



### Cable Protection Covers

Heavy duty protection cover manufactured from high impact recycled polyethylene sheet.

Standard Sizes

- **STOK152:** 1m x 152mm x 12mm.
- **STOK244:** 1m x 244mm x 12mm.

Standard legend:

'CAUTION ELECTRIC CABLE BELOW'

(other legends and cover widths available by special order).

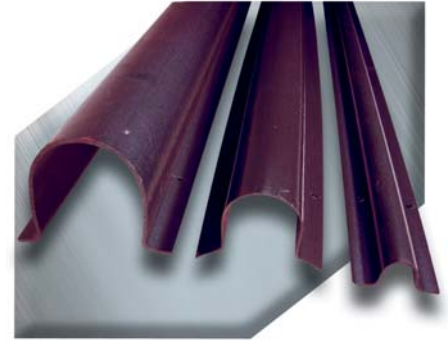
All cable covers are pre-drilled and supplied with plastic joining peg.



## Cable Protection Guards

*Benolex high impact black U-PVC protection guards.*

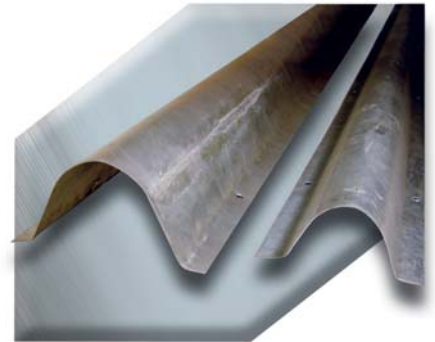
Part Number	Size
CG25BK	25mm x 25mm x 3m
CG55BK	55mm x 55mm x 3m
CG80BK	80mm x 80mm x 3m



## Cable Protection Guards

*Galvanised steel protection guards.*

Part Number	Size
551810	1inch x 2.4m
551820	2inch x 2.4m
551830	3inch x 2.4m



## Resin

**Part Number: R3 SWE 500**

Prysmian 5 litre 'BITHANE' three part low density polyurethane resin.

2 part and other pack sizes available.

Refer to the Insulation Enhancement Materials section (page 73) for Tyco 'Guroflex'.



Other Service Connection related products can be found at:

- Earthing Page 63.
- LV Jointing Page 28.
- Miscellaneous Page 86.



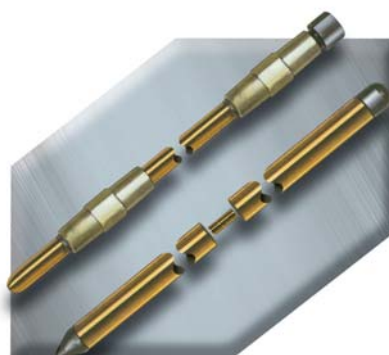


## furse Earthing Rods

### Copper Bonded Steel Cored Earth Rod

Tested to BS EN 50164-2, BS 7430.

Ref	Nominal Dimensions (mm)
RB205	16 x 1200 (other sizes available)
CG270	Coupling
ST200	Driving Stud



### Solid Copper Rod

Tested to BS EN 50164-2, BS 7430.

Ref	Nominal Dimensions (mm)
RC010	15 x 1200 (other sizes and stainless steel available)
CG013	Coupling Dowel
SP010	Spike
ST010	Driving Stud

## furse Earth Rods Clamps

- Tested to BS EN 50164-1.
- Corrosion resistant, high strength copper alloy (not commercial brass).

### Rod to Tape Clamp (Type A)

Ref	Rod Diameter (mm)	Maximum Tape (mm)
CR105*	16mm	26 x 12

### Rod to Cable Clamp (Type G)

Ref	Rod Diameter (mm)	Conductor Range (mm <sup>2</sup> )
CR515*	16mm	16 - 70

### Rod to Cable Lug Clamp (Type B)

Ref	Rod Diameter (mm)	Lug Hole Size (mm)
CR215*	16mm	10

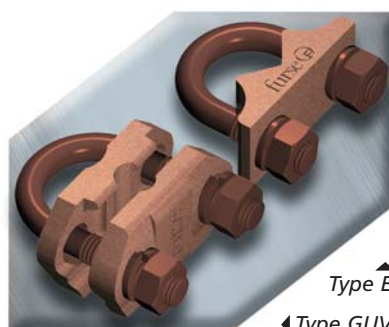
### U-Bolt Rod Clamp (Type E)

Ref	Rod Diameter (mm)	Hole Centres (mm)
CR305	16mm	37

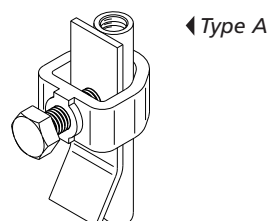
### Rod to Cable Clamp (Type GUV)

Ref	Rod Diameter (mm)	Conductor Range (mm <sup>2</sup> )
CR700	16mm	16 - 70
CR705	16mm	70 - 185

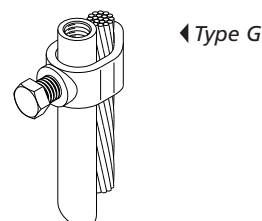
\*Other sizes available.



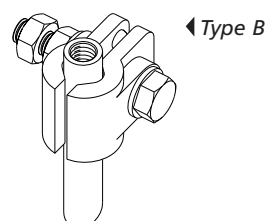
↑ Type E  
← Type GUV



← Type A



← Type G



← Type B



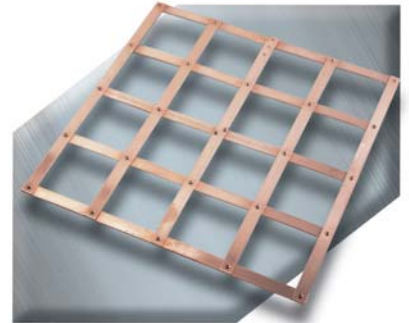
## furse Solid Copper Earth Plate

Ref	Size (mm)
PE010	600 x 600 x 3
PE020	900 x 900 x 3



## furse Lattice Copper Earth Mat

Ref	Size (mm)
PE110	600 x 600 x 3
PE120	900 x 900 x 3



## furse Earth Inspection Pits

### Concrete Pit

Ref	Weight (kg)
PT005	30
PT050	19
Accessories	
PT006	5 Hole Earth Bar
PT007	7 Hole Earth Bar

### Plastic Pit

Ref	Weight (kg)
PT205	1.8
Accessories	
PT004	5 Hole Earth Bar



## furse Soil Conditioning Agent

Marconite conductive aggregate added to concrete in place of sand helps produce a reliable earth resistance. COSHH sheet available.

Ref	Bag Weight (kg)
CM025	25



## furse Bentonite

Used as a backfill surrounding the earth rod helps with water retention and thus maintain a low soil resistance. COSHH sheet available.

Ref	Bag Weight (kg)
CM015 (Powder)	25
CM015-PM (Granules)	25







## furse Earth Bars

Part No.	Description
LK245-6	6 Way Earth Bar
LK245-8	8 Way Earth Bar
LK245-10	10 Way Earth Bar
LK245-12	12 Way Earth Bar
LK245-16	16 Way Earth Bar
LK245-20	20 Way Earth Bar

Other configurations available.



## furse Earth Bars with Single Disconnecting Link

Part No.	Description
LK205	Disconnecting Link
LK243-6	6 Way Earth Bar c/w Disconnecting Link
LK243-8	8 Way Earth Bar c/w Disconnecting Link
LK243-10	10 Way Earth Bar c/w Disconnecting Link
LK243-12	12 Way Earth Bar c/w Disconnecting Link
LK243-16	16 Way Earth Bar c/w Disconnecting Link
LK243-20	20 Way Earth Bar c/w Disconnecting Link

Other configurations available.



## furse Earth Bars with Twin Disconnecting Link

Part No.	Description
LK207-6	6 Way Earth Bar c/w Twin Disconnecting Link
LK207-8	8 Way Earth Bar c/w Twin Disconnecting Link
LK207-10	10 Way Earth Bar c/w Twin Disconnecting Link
LK207-12	12 Way Earth Bar c/w Twin Disconnecting Link
LK207-16	16 Way Earth Bar c/w Twin Disconnecting Link
LK207-20	20 Way Earth Bar c/w Twin Disconnecting Link

Other configurations available.



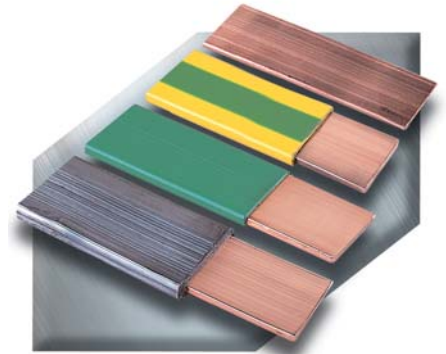
## furse Insulator

Part No.	Description
IN005	Insulator with 2 Studs & 3 Nuts (M10)
IN013	Insulator Only



## furse Bare Copper Tape

Ref	Conductor Size (mm)	Std Coil Size (m)	Weight Of Coil (kg)
TCO30	25 x 3	25	16.75
TCO32	25 x 3	30	20.10
TCO50	31 x 6	30	49.50
TCO65	38 x 6	25	50.50
TCO66	40 x 4	30	42.60
TCO75	50 x 4	30	53.40
TCO80	50 x 6	20	53.60

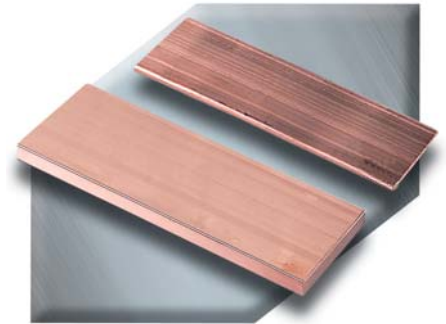


PVC covered tape available in various colours in some sizes.  
Contact our sales office for information on availability.

## furse Hard Drawn Copper Bar

Ref	Conductor Size (mm)	Weight Per Metre (kg)
BA205	25 x 3	0.67
BA210	25 x 6	1.33
BA230	50 x 6	2.67

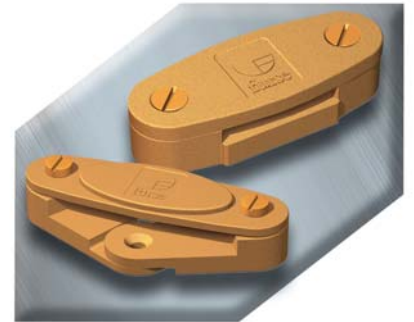
Some other sizes available.



## furse DC Tape Clip - Metallic

For use with bare copper.

Ref	Conductor Size (mm)
CP210-H	25 x 3
CP220-H	25 x 6
CP230-H	31 x 3 and 31 x 6
CP240-H	38 x 3, 38 x 6 and 40 x 6
CP260-H	50 x 3 and 50 x 6



## furse DC Tape Clip - Brown Plastic

Ref	Conductor Size (mm)
CP015	25 x 3
CP065	50 x 6

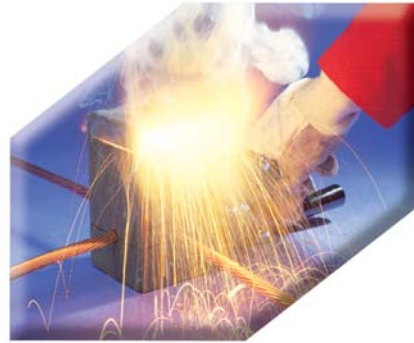
Plastic DC Tape Clips available for other sizes and PVC covered tape.





furse  **FurseWELD**

- Requires no external power source.
- Creates high quality electrical connections.
- Can be used safely with minimum of training.
- Is completely portable.

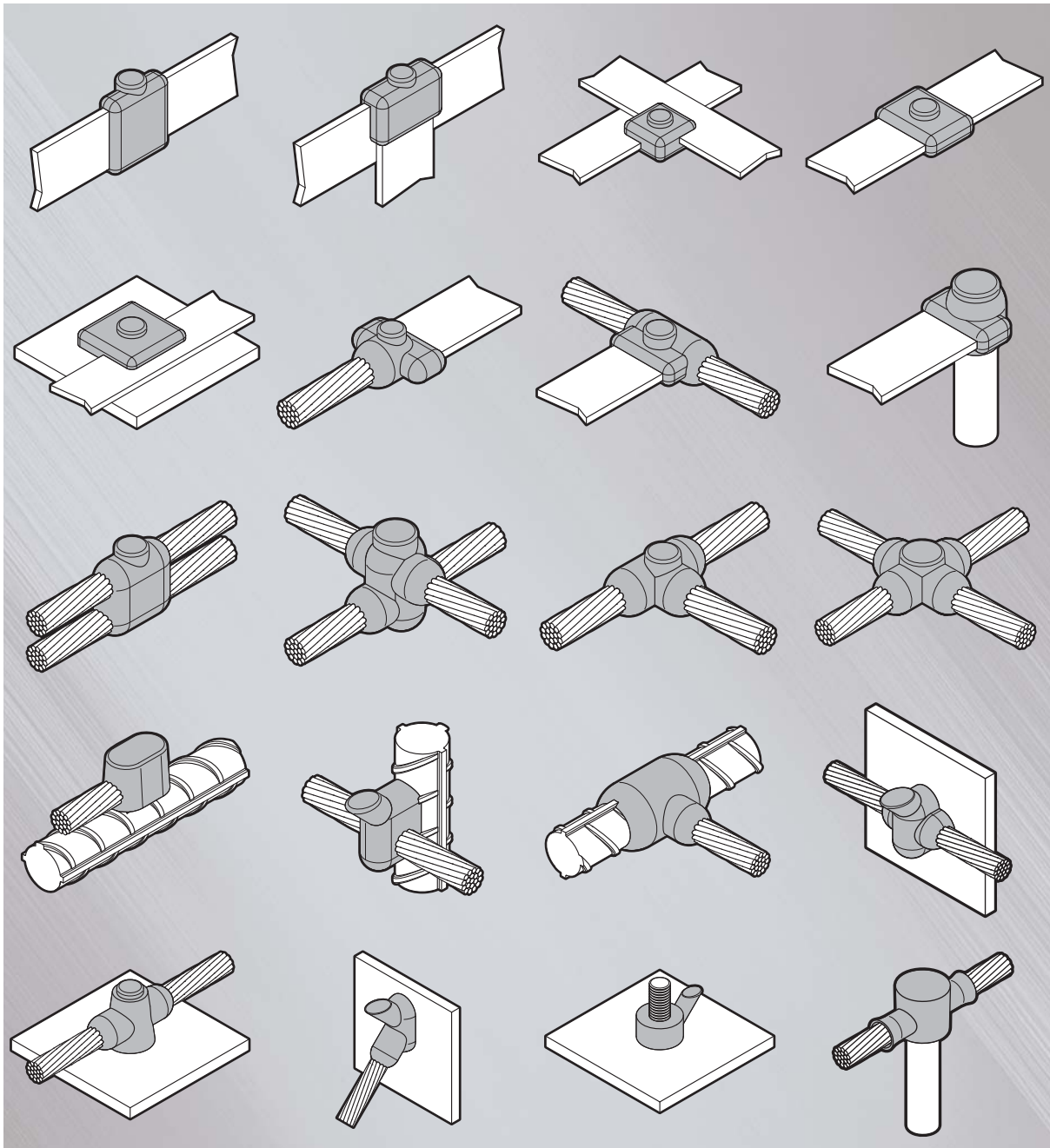


**FurseWELD connections are:**

- Tolerant to repeated fault currents.
- Highly conductive.
- Do not loosen.

**Selection of FurseWELD Connections**

Please consult our sales office for ordering details.







## Fuse Units Titan 2 Unit

The Titan 2 range provides improved flexibility and will be the only unit available that gives the extensive range of options required by installers.

### Specification:

- Designed, manufactured in accordance with BS7654 and IEC947 Pt1.
- Clear access gear tray for enhanced access.
- Terminal blocks to accept circular conductors up to 25mm<sup>2</sup>.
- Cable entry plates in plastic or brass.
- Sealing wire and padlock facilities available.
- IP43 rating.
- Standard unit: Height 150mm / Width 81mm / Depth 65mm.
- Various extension troughs available to provide additional space when terminating larger or multiple cables.

### Option Available:

Single Phase, Single Pole, Loop In / Out, Single Fuse	(Type NT02)
Single Phase, Single Pole, Loop In / Out, Two Fuse	(Type NT04)
Single Phase, Single Pole, CNE (REC version)	(Type NT15)
Single Phase, Double Pole, Loop In / Out, Single Fuse	(Type NT06)
Single Phase, Double Pole, Loop In / Out, Two Fuse	(Type NT08)
Single Phase, Double Pole, Loop In / Out, with Fused Double Pole Spur	(Type NT10)
Three Phase, Double, Loop In / Out, Single Fuse	(Type NT12)
Three Phase, Double, Loop In / Out, Two Fuse	(Type NT14)



## Titan Extension Troughs

Various extension troughs available to provide additional space when terminating larger or multiple cables.



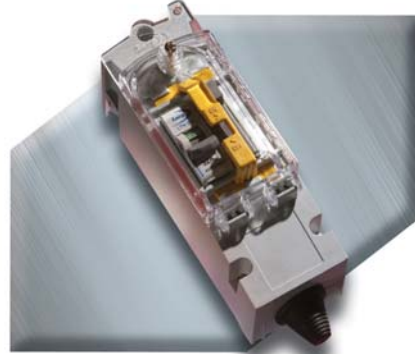


## Fuse Units Trojan Isolators

### Trojan Mini

Built for ease of installation, the slimline Trojan Mini double pole lockable isolator has improved cable access to suit various types of termination and cables.

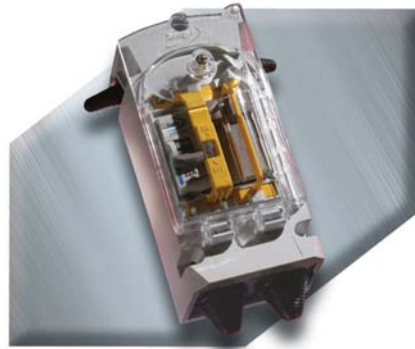
Size: Height 170mm / Width 59.5mm / Depth 83mm.



### Trojan Midi

3 way modular system incorporating a switch, fuse or MCB's.

Size: Height 160mm / Width 78mm / Depth 80.5mm.

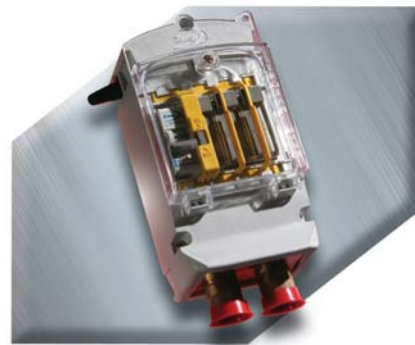


### Trojan Maxi

4 way modular system. Din rail construction enables up to 4 din modules. Extension troughs and gland plate options provide maximum flexibility of cable arrangements.

Size: Height 172mm / Width 94mm / Depth 84mm.

Ask our sales office for details of the full range and options.



## Trojan Extension Troughs

To compliment the Trojan Midi and Maxi, a range of extension troughs can provide additional space for larger or multiple conductors.





## Fuse Units

### MC040SLF Single Phase Fuse Unit

Designed, tested and manufactured in accordance with BS7654.1997. Two versions, separate neutral and earth (SNE), and combined neutral/earth (CNE) for PME applications. Re-designed cam action ensures low extraction force. Operating cam lever ensures electrical disconnection prior to removal of fuse carrier for extra safety.

- Max rating 25amp.
- Accepts tag type LST fuses.
- Maximum copper cable 16mm<sup>2</sup>.



### MC040DN Compact Double Pole Unit

The compact double pole MC040DN fuse unit has been designed for installation in confined spaces.

- Max rating 25amp.
- Accepts fuse links with offset tags.
- Height 70mm / Width 57mm / Depth 53mm.



## Fuse Carrier

Replacement fuse carriers for Lucy SLE, SLF, DN and Titan Cut Outs are available.



## HRC Fuses

A complete range of HRC Fuses to suit the cut-outs described here are available.



## Cast Iron Service Pillars



### Miniline

Miniline Code	External Dimensions (mm)				Backboard Dimensions (mm)		Internal Working Depth	Weight (Kg)
	Above Ground Height	Root	Width	Depth	Height	Width		
12855	711	203	490	180	610	440	145	76
12893	917	203	490	180	765	440	145	102
A24046	930	300	580	260	790	530	175	152

### Hycast 407

Pillar Size Code	22	30	38	42	46	54	58	66	70
Width Of Pillar Roof (mm)	632	835	1045	1146	1248	1452	1553	1756	1858
Ground Fixing Centres (mm) <i>(Bolt on root only)</i>	273	476	686	787	889	1092	1194	1397	1498
Ground Fixing Centres (mm) <i>(Shell only)</i>	521	724	934	1035	1137	1340	1442	1645	1746
Min. Distance Required To Open Door (mm)	435	486	452	503	554	655	706	808	895
Internal Width (mm)	559	762	972	1073	1175	1378	1480	1683	1784
Backboard Width (mm)	483	686	896	997	1099	1302	1404	1607	1708
<b>Approx. Empty Weight (Kg)</b>	<b>22</b>	<b>30</b>	<b>38</b>	<b>42</b>	<b>46</b>	<b>54</b>	<b>58</b>	<b>66</b>	<b>70</b>
Highline	240	280	315	332	360	398	415	440	460
Lowline	203	241	279	292	318	343	368	394	406

**NOTE:**

- Highline Height = 1454mm.
- Lowline Height = 1149mm.
- Pillar sizes 22 and 30 single door hinged from left hand side, remainder are 2 doors.
- Internal work depth from backboard = 353mm.

## Fortress Range Sheet Steel

Available in three finishes:

- HDG Hot dipped galvanised to BS729 (3mm steel).
  - HDP as HDG then treated and painted.
  - STP 3mm stainless steel treated and painted.
- Door seals to IP65.
  - Detachable roof and root.



### Single Door

Pillar Size Code	6	8	10	12
Total Height (H) (mm)	910	1110	1460	1553
Root Section (R) (mm)	300	300	350	350
Width (W) (mm)	411	611	811	1111
Depth (D) (mm)	211	281	381	431
Door Opening Height (DH) (mm)	415	615	915	1015
Door Opening Width (DW) (mm)	300	500	700	1000
Working Depth (WD) (mm)	155	225	325	375
Backboard Size (WxH) (mm)	380 x 455	580 x 655	780 x 955	1080 x 1040
Weight (Kg) (mm)	42.5	71.5	108	142

### Double Door

Pillar Size Code	14	16	18	20	22	24	26	28	30
Height Above Root (H) (mm)	1300	1300	1300	1300	1600	1600	1600	1600	1600
Root Section (R) (mm)	380	380	380	380	380	380	380	380	380
Width (W) (mm)	1250	1500	1750	2000	1250	1500	1750	2000	2250
Depth (D) (mm)	450	450	450	450	450	450	450	450	450
Working Depth (WD) (mm)	375	375	375	375	375	375	375	375	375
Backboard Size (WxH) (mm)	1220 x 1145	1470 x 1145	1720 x 1145	1970 x 1145	1220 x 1445	1470 x 1445	1720 x 1445	1970 x 1445	2220 x 1445
Weight (Kg)	176	202	234	266	201	231	269	305	343





## Fortress Sheet Steel Mini Pillars

- Type HDG - Hot dipped galvanised to BS729 (supplied in 3mm steel).
- Type HDP - Hot dipped galvanised and painted (supplied in 3mm steel).



Pillar Size Code	4810	4811	4812	4813	4814	4815
Nominal Size in Inches (WxD)	4 x 4	6 x 4	6 x 6	8 x 6	10 x 6	14 x 6
Total Height (H) (mm)	1010	1010	1010	1010	1010	1210
Root Section (R) (mm)	223	223	223	223	223	223
Width (W) (mm)	110	160	160	210	260	365
Depth (D) (mm)	120	120	170	170	170	170
Door Opening Height (DH) (mm)	490	490	490	490	490	690
Working Depth (WD) (mm)	85	85	130	130	130	130
Backboard Size (WxH) (mm)	90 x 500	140 x 500	140 x 500	190 x 500	240 x 500	345 x 710
Weight (Kg)	11	14	16	19	22	32

**NOTE:**

- These pillars have fully removable doors.
- Tri-head key wedge lock for added security.
- Earth lead connections supplied from pillar body to door.
- Removable backboard for wiring.





## HVBT High Voltage Busbar Tape

Product Reference	Size (m x mm)
HVBT - 12A	10 x 25 wide roll
HVBT - 14A	10 x 50 wide roll
HVBT - 15A	10 x 75 wide roll
HVBT - 16A	10 x 100 wide roll



Heat shrinkable adhesive coated general purpose high voltage insulation tape for busbar insulation.



## BPTM / BBIT High Voltage Busbar Tube

### BPTM Medium Wall Thickness Tube

Product Reference	Spool Length (m)
BPTM 15 / 16 A/U	30
BPTM 30 / 12 A/U	30
BPTM 50 / 20 A/U	30
BPTM 75 / 30 A/U	30
BPTM 100 / 40 A/U	25
BPTM 120 / 50 A/U	25
BPTM 175 / 70 A/U	25



### BBIT Thick Wall Thickness Tube

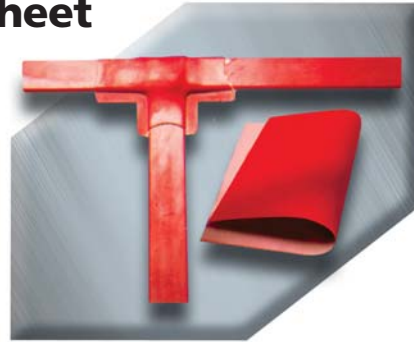
Product Reference	Spool Length (m)
BBIT 25 / 10 A/U	30
BBIT 40 / 16 A/U	30
BBIT 65 / 25 A/U	15
BBIT 100 / 40 A/U	15
BBIT 150 / 60 A/U	15





## HVIS High Voltage Heat Shrinkable Sheet

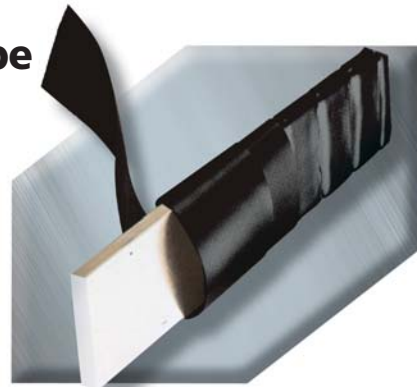
*Adhesive coated sheet for busbar connections and other complex shapes.*



Product Reference	Description
HVIS - 05	500mm x 600mm 3 pieces per box
HVIS - 10	10m x 660mm roll
HVIS - Tools - 01	Re-usable clamps for installing HVIS

## LVBT Low Voltage Heat Shrinkable Tape

*General purpose heat shrinkable tape for applications up to 1000V.*



Product Reference	Spool Length
LVBT - 1 - R	25mm x 8m
LVBT - 2 - R	50mm x 8m
LVBT - 4 - R	100mm x 8m

## Guroflex MV

*Cold-pour insulating compound for medium voltage applications.*

Guroflex MV is a two component cold pour insulating compound that cures to a soft rubbery solid that will not melt or flow. It's excellent electrical characteristics make it suitable for various bulk insulation applications in medium voltage switchgear.



Product Reference	Description
EPPA-GURO	5.31 litre
EPPA-GURO-10	10 litre





## PVC Insulation Tapes

- Electrical insulation - low voltage.
- Mechanical protection.
- Protection against moisture, alkalis and acids.



Product Reference	Characteristics	Dimensions (mm x m)	Thickness (mm)
Scotch Super 33+	Premium grade PVC tape Temperature Range -18 / +105°C UV resistant and flame retardant.	19 x 20	0.18
Scotch 35	Premium PVC grade colour tape UV resistant and flame retardant Colours: red, yellow, blue, brown green, white, grey, orange, violet.	19 x 20	0.18
Scotch Super 88	Premium grade heavy duty tape Temperature Range -18 / +105°C UV resistant and flame retardant.	19 x 20	0.22
Temflex	General use PVC tape Colours: black, white, yellow, blue, green, brown, green/yellow, orange, grey, red.	19 x 10 19 x 20	0.15



## Tapes For High & Medium Voltage Applications

- Used for medium and high voltage applications in splices and terminations.
- Moisture resistant.
- Self bonding and void filling.



Product Reference	Characteristics	Dimensions (mm x m)	Thickness (mm)
Scotch 13	Semi-conductive rubber tape.	19 x 4.5	0.76
Scotch 23	Primary insulating rubber tape up to 69kV. Corona resistant self fusing. Chemical resistant.	19 x 9.1	0.76
Scotch 70	Self fusing silicone rubber tape. UV, track and chemical resistant.	25 x 9.1	0.30





## Tapes For Sealing & Protection

- Moisture seal.
- Insulation of low voltage up to 1000V.



Product Reference	Characteristics	Dimensions (mm x m)	Thickness (mm)
ScotchFil Putty	Insulating putty. Self-bonding.	38 x 1.5	3.20
Scotch VM	Vinyl mastic tape. Self fusing rubber mastic laminated to all weather grade vinyl (pads also available).	19 x 6.0	0.63
Scotch 50 / 51	All weather corrosion protection tape. Protection against abrasion, moisture, salt, acids and alkalis.	25 x 30	0.25
Scotch 27	Heat resistant. High temperature glass cloth. Continuous operation @ 130°C.	12 x 20 12 x 55 19 x 55 25 x 55	0.178
Scotch 77	Arc proofing type. Expands in fire to provide fire and arc protection.	38 x 6	0.762 (unexpanded)

Ask for the 3M electrical catalogue to see the full range of 3M jointing, insulating, marking and identification products.



## Scotch™ 2000 Electricians Duct Tape

50mm x 46m roll.

- Easy tear.
- Temperature stable.
- Clean residue free removal.



## Commercial Electric Trace Heating

For Frost Protection and Temperature Maintenance.

### Freeze Protection of Pipes

*Wintergard.*

230V frost protection for pipework at a maximum of 65°C operating temperature.

Ref	Specification
FSA2X	10w/m @ 5°C
FSB2X	26w/m @ 5°C



230V frost protection for pipework at a maximum of 95°C operating temperature and temperature maintenance for metal waste pipes containing fatty waste water.

Ref	Specification
FSC2X	31w/m @ 5°C
	22w/m @ 40°C

### Heater Selection

*Frost protection up to minus 20°C.*

Pipe Dia > (mm) (inches)	15 1/2"	22 3/4"	28 1"	35 1 1/4"	42 1 1/2"	54 2"	67 2 1/2"	76 3"	108 4"	125 5"	150 6"	200 8"
Insulation Thickness (mm)												
10mm	FS-A-2X	FS-B-2X	FS-B-2X	FS-B-2X	FS-B-2X	FS-B-2X	FS-B-2X	FS-B-2X				
15mm	FS-A-2X	FS-A-2X	FS-A-2X	FS-B-2X	FS-B-2X	FS-B-2X	FS-B-2X	FS-B-2X	FS-B-2X			
20mm	FS-A-2X	FS-A-2X	FS-A-2X	FS-A-2X	FS-A-2X	FS-B-2X	FS-B-2X	FS-B-2X	FS-B-2X	FS-B-2X		
25mm	FS-A-2X	FS-A-2X	FS-A-2X	FS-A-2X	FS-A-2X	FS-A-2X	FS-B-2X	FS-B-2X	FS-B-2X	FS-B-2X	FS-B-2X	
30mm	FS-A-2X	FS-A-2X	FS-A-2X	FS-A-2X	FS-A-2X	FS-A-2X	FS-A-2X	FS-B-2X	FS-B-2X	FS-B-2X	FS-B-2X	FS-B-2X
40mm	FS-A-2X	FS-A-2X	FS-A-2X	FS-A-2X	FS-A-2X	FS-A-2X	FS-A-2X	FS-A-2X	FS-B-2X	FS-B-2X	FS-B-2X	FS-B-2X
50mm	FS-A-2X	FS-A-2X	FS-A-2X	FS-A-2X	FS-A-2X	FS-A-2X	FS-A-2X	FS-A-2X	FS-A-2X	FS-B-2X	FS-B-2X	FS-B-2X

*Frost protection cables FS-A-2X and FS-B-2X are suitable for any pipe material (metal or plastic) without restriction.*

*For plastic pipes, please use aluminium adhesive tape AT180. The frost protection cable should be covered over its entire length.*



## Commercial Electric Trace Heating

### Hot Water Trace Heating

*HWAT - Hot Water Temperature Maintenance.*

#### Heating Cable Selection

Ref	Specification
HWAT-L	7w/m @ 45°C
HWAT-M	9w/m @ 55°C
HWAT-R	12w/m @ 70°C*

\*Used with HWAT-ECO controller to maintain 55°C, but with the facility to raise water temperature for thermal disinfection to prevent legionella.



#### Recommended Thermal Insulation Thickness

Pipe Size (mm)	15	22	28	35	42	54
Insulation Thickness (mm)	20	20	25	30	40	50

Ambient Temperature	18°C
Thermal Conductivity	0.035W/mK

### Frost and Snow Protection

*ICESTOP - Frost protection for gutters and downpipes.*

Ref	Specification
GM2X	36w/m in Iced Water
	18w/m in Air at 0°C

The heating cable is installed in a straight length in the gutter, parallel lengths of cable can be used in wide valley, parapet or box gutters.







**tyco** / Thermal Controls

## Commercial Electric Trace Heating

*For Frost Protection Maintenance.*

### Ramp Heating

*Snow and ice melting on paths, ramps, stairs and other access ways. Self regulating - Viagard.*

Ref	Specification
EM2XR	90w/m @ 0°C

Used in conjunction with VIA-DU-20 controller and temperature and moisture sensors for optimum efficiency.

Mineral insulated and constant wattage options available for asphalt and large areas.



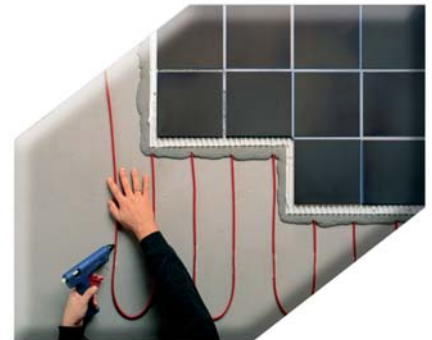
**tyco** / Thermal Controls

## Electric Underfloor Heating

### T2 Red

*5 - 15 watts per metre\* Self Regulating Cable.*

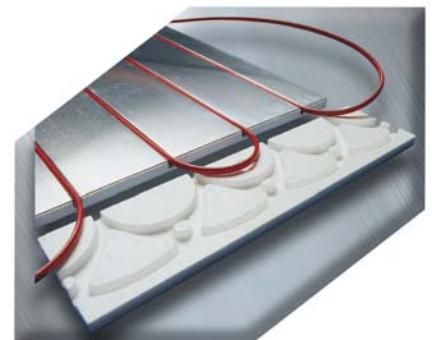
*\*Depending upon spacing and floor construction.*



### T2 Red

*With T2 Reflecta.*

*Energy saving aluminium covered insulation plate system.*

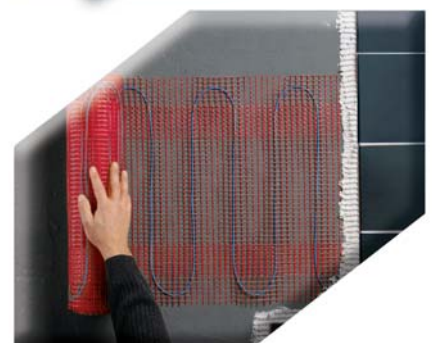


### T2 Quicknet

*Thin (3mm) Self Adhesive Mat.*

*90 or 160 watts per metre in various lengths.*

Ref	Specification
T2 Quicknet 90	90w/mm <sup>2</sup>
T2 Quicknet 160	160w/mm <sup>2</sup>

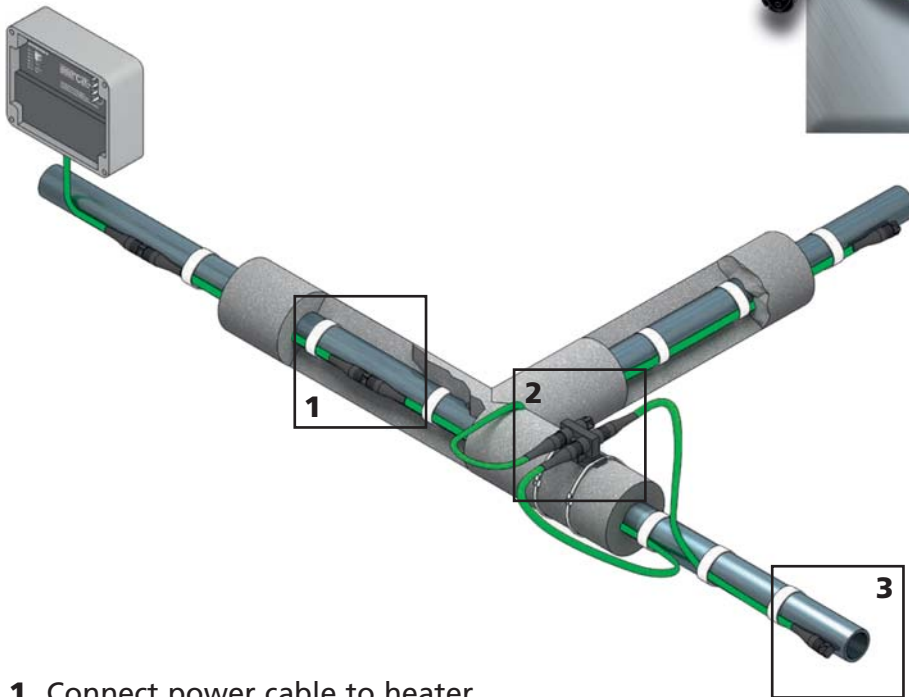






## Raychem FlexiClic™ FP

Plug together system for the frost protection of pipes.



- 1 Connect power cable to heater.
- 2\* Connect power cable or heating module to connector unit to make T-junction or 4 way connection.
- 3 Plug in cap to make an end seal.

### Modules to make up Flexiclic System

#### FlexiClic-Power Cable

- 1 m or 3 m modular power cable (including end seal).
- 3 x 2.5 mm<sup>2</sup> conductors.
- 20 A capacity.

#### FlexiClic FP Heating Cable Unit

- Modular heating cable for pipe frost protection.
- Available lengths: 1, 3, 5, 7, 15, 25 and 50 m.
- Max. circuit length: 100 m (16A circuit breaker).

#### FlexiClic-CE

- Connection module (including 2 end seals). As 2\* above to make T-junctions.

#### FlexiClic-E

- Multi-functional end seal. One required at the end of each circuit/cable.



**tyco** / Thermal Controls

## Industrial Trace Heating Cables

*For Frost Protection Temperature Maintenance.*

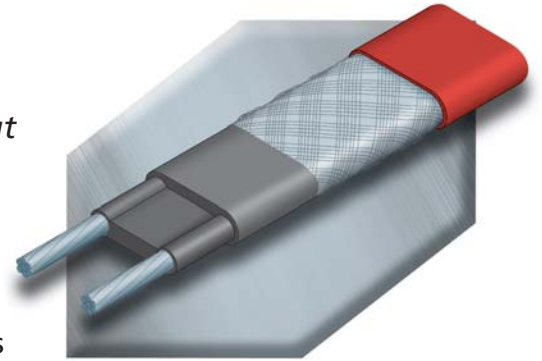
### **BTV Raychem Self Regulating**

*Electric trace heating for frost protection in industrial and 'hazardous area' situations without steam cleaning.*

The BTV family of 16 self regulating parallel circuit heating cables for frost protection of pipes and vessels, have the unlimited T6 classification for hazardous areas and can be exposed to temperatures up to 65°C.

Outputs at 0°C range from 11w/m to 35w/m and 110 volt and 230 volt versions are available.

Contact Cable Services with details of your application for a design recommendation and quotation. See page 83 for our simple data input sheet.



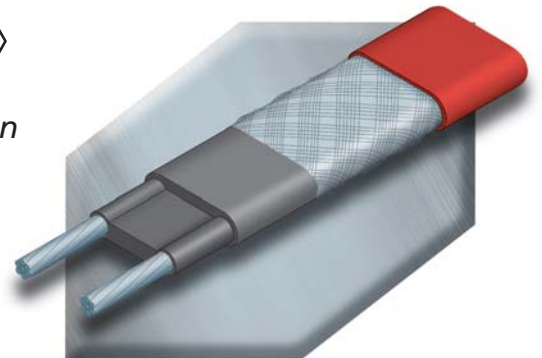
### **QTVR Raychem Self Regulating**

*Electric trace heating for industrial temperature applications up to 110°C, including applications in 'hazardous areas' but not steam cleanable.*

The QTVR family of 6 self regulating parallel circuit heating cables for temperature maintenance application on pipes and vessels in industrial environments, can also be used in frost protection applications on large diameter pipes, it has a T4 classification.

Outputs range from 40w/m to 70w/m at 0°C and 20w/m to 35w/m at 60°C. Available as 110 volt or 230 volt.

Contact Cable Services with details of your application for a design recommendation and quotation. See page 83 for our simple data input sheet.





## Industrial Trace Heating Cables

*For Frost Protection Temperature Maintenance.*

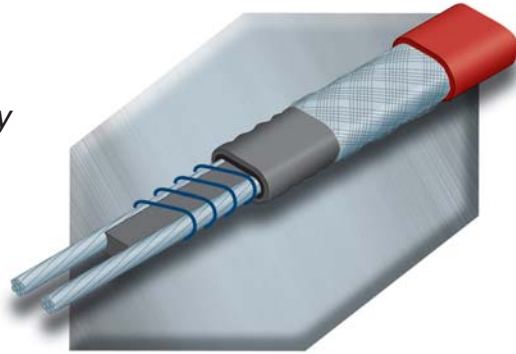
### **XTV Raychem Self Regulating**

*Electric trace heating for process temperature maintenance applications up to 120°C which may be subject to steam cleaning.*

The XTV family of 10 self regulating parallel circuit heating cables for frost protection and process control have T3 classification (except 20X which is T2) and can be used in situations with a continuous exposure temperature of 120°C and an intermittent exposure temperature (with power off) of 215°C (as in steam cleaning).

Outputs range from 12.5w/m to 66w/m at 0°C and 4w/m to 35w/m at 120°C. XTV heaters are available as 110 volt and 230 volt.

Contact Cable Services with details of your application for a design recommendation and quotation. See page 83 for our simple data input sheet.



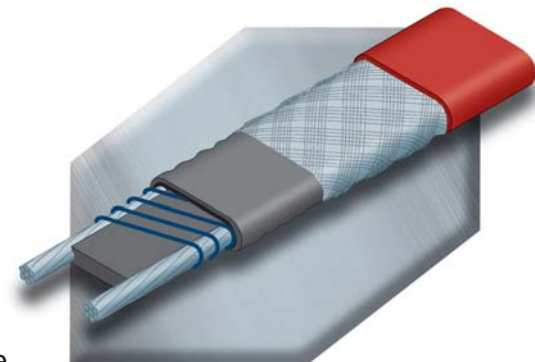
### **KTV Raychem Self Regulating**

*Electric trace heating for process control applications up to 150°C which may be subject to steam cleaning.*

The KTV family consists of 8 self regulating parallel circuit heating cables for process control applications. The heaters have T2 classification and can be used in applications with a continuous exposure temperature of 150°C and an intermittent exposure temperature (with power off) of 215°C (as in steam cleaning).

Outputs range from 16w/m to 67w/m at 0°C and 6w/m to 30w/m at 150°C. KTV is available as 230 volt and 110 volt.

Contact Cable Services with details of your application for a design recommendation and quotation. See page 83 for our simple data input sheet.





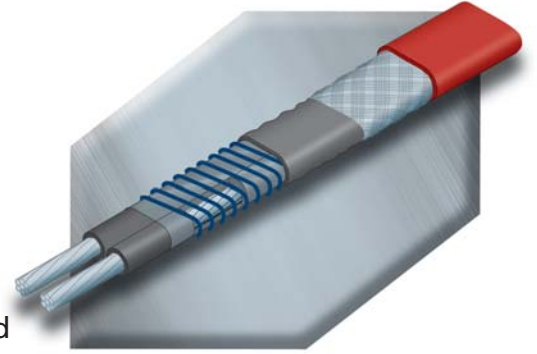
**tyco** / Thermal Controls

## Industrial Trace Heating Cables

*For Frost Protection Temperature Maintenance.*

### VPL **Raychem** High Temperature Power Limiting

*Electric trace heating cable for frost protection and process temperature maintenance requiring high power output and/or high temperature exposure.*



VPL power limiting cables are parallel heaters formed by a coiled resistor alloy heating element wrapped around two parallel conductors. VPL cables can be overlapped and the parallel circuit means the cable can be cut to length and terminated on site.

Maximum exposure temperature of 250°C (power off).

Outputs at 0°C range from 16w/m to 66w/m and 10w/m to 48w/m at 140°C.

Contact Cable Services with details of your application for a design recommendation and quotation. See page 83 for our simple data input sheet.

**tyco** / Thermal Controls

*The Tyco Thermal Control range of Trace Heating Cables also includes the **ISOPAD** range of parallel circuit constant wattage heaters and **Polymer** insulated series resistance heaters and the **Pyrotenax** range of mineral insulated heating cable.*

*A comprehensive range of accessories are always available ex-stock.*

**The Cable Services Group** are able to offer a full trace heating design service; use the input sheet on the next page or contact your usual sales office with your requirements. Smith Electrical are also able to provide trace heating design and installation packages, contact the Glasgow sales office on 0141 621 2060.



# Data Input Sheet - Fax Back

For our FREE design proposal please complete the data input sheet below and fax it to a Cable Services sales office.

Name: .....

Company: .....

Address: .....

.....

Tel No: ..... Fax No: .....

Size of Pipe (Ø): ..... Length of Pipe: .....

Material of Pipe: .....

Thickness & Type of Insulation: .....

Ambient Temperature: .....  
(surrounding air, min & max)

Temperature: .....  
(to be maintained, ie 5°C for frost protection)

Maximum Temperature: .....  
(on the pipe ie through steam cleaning etc)

Indoors  Outdoors

Hazardous  Non-Hazardous

Number of Valves: .....

Number of Pipe Supports: .....

Supply Voltage .....

Additional Information:  
(general description of project etc)

.....

.....

.....

.....

.....

.....

.....

.....



RS 21752  
Cable Services  
RS 26602  
Smith Electrical

**Cable Services Ltd**  
(NW / UK / Export)  
Rhosddu Industrial Estate,  
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**Tel: 01978 340450**  
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**Email: sales@cableservices.co.uk**

**(Central) Ltd**  
Unit 2 Douglas Park, Opal Way,  
Stone Business Park, Stone, Staffs ST15 0YJ  
**Tel: 01785 825970 • Fax: 01785 825977**  
**Email central@cableservices.co.uk**

**(Liverpool) Ltd**  
43 St. Johns Road, Liverpool L20 8AZ.  
**Tel: 0151 9339022 • Fax: 0151 9339765**  
**Email: lpool@cableservices.co.uk**

**(Smith Electrical) Ltd**  
Unit 14, Block 8, Thornliebank Industrial Estate  
Glasgow G46 8JH.  
**Tel: 0141 621 2060 • Fax: 0141 638 9996**  
**Email: sales@smithelec.co.uk**



Maréchal manufacture and market plugs and sockets from 5A multipins to 600A heavy duty interlocking connectors. These ranges include:

Type	Description
PN	Compact connectors - Power to 30A 7 & 12 multipins 10A.
DN	Decontactors. Metal to 90A.
DS	Decontactors. Poly 16 - 150A, Metal 63 - 250A.
DB	Disbreaker. 30kW, AC23 rated motor switch.
DSN	Poly decontactors. 16A, 32A, 63A - IP67.
DN/DS/DSN	Multipins from 9 to 37 pin.
OF	Heavy duty metal, 315A, 400A, 500A and 600A - IP67.
ADF	PX and DX explosion-proof connector ZONE 1.
CS & CCH	Single pole to 400mm <sup>2</sup> & 200A battery charger connectors.



**For Harbours & Shipyards:**

Salt corrosion, humidity, temperature change and mechanical damage all lead to faulty connections overheating and ultimately failure.

*Robust and reliable designs up to 700A - Superior materials resist corrosion & damage. Butt-contacts are reliable and prevent overheating. Power supply is always available when needed, even after years of use. Switched and interlocked designs.*



**For Food & Drink Industries:**

Factory conditions (eg in cheese plants) make it difficult to operate plugs and sockets safely whilst moisture ingress is common.

*Automatic IP67 when plug is inserted - Even if wearing protective gloves the operator simply presses the release button. A quarter turn removes the now dead plug from its socket. With auxiliaries for control functions.*



**Water & Waste Industries:**

Hard-wired submersible mixers and pumps take much longer to isolate before lifting for maintenance purposes. Often a fitter and electrician are required adding to costs.

*Maréchal's decontactor sockets have an integral switch producing a load make & break design. When connected to a pump the fitter can disconnect safely just by pressing the button creating visible isolation and reducing costs.*

*With auxiliary contacts for seals etc.*







### Heavy Duty Equipment:

Often plugs and sockets with high amperage are difficult to disconnect because of size and contact heating (welding).

**Robust, easy-to-use designs up to 600 A** - Frictionless butt-contact design allows simple connection and disconnection. PF range offers both electrical & mechanical interlocking for safety. Auxiliary contacts available.



### Fire Resistant Tunnel Equipment:

Fans and lighting have to keep working as long as possible in case of fire. Most equipment is thus hard wired, making maintenance difficult.

**Resistant up to 400 °C** - Marechal offers a range of plugs and sockets for extractor fans and enclosures with sockets specifically designed for tunnel lighting.



### Marechal DECONTACTOR™:

The ideal solution for connecting motors.

When a motor starts, the brief overload generated is many times greater than the nominal current. While this overload should not affect properly designed motors, it could be damaging to most connectors.

Thanks to its silver-nickel butt-contact technology, the decontactor withstands these high and repeated overloads without over-heating or change in its performance. The decontactor is thus ideally suited for motor connections, even for motors that have to start frequently.

#### **Connect with confidence, disconnect with safety...**

The decontactor socket has an integral load-break isolating switch mechanism that allows users to connect and disconnect electrical equipment safely up to 45kW: a release button cuts the power and de-energises the plug before it can be removed. Even in the event of a short-circuit, the decontactor guarantees user safety and eliminates any electrocution hazard.



**Enhance Control** - Auxiliary contacts can be used to connect thermistors or process control without the need for an extra connector.

**Exceptional Connection Quality** - The silver-nickel butt-contacts offer excellent conductivity and resistance to corrosion and vibration.

**Reliable Material** - The casings are made of glass fibre reinforced polyester or metal, they resist shocks (IKo8) and extreme temperatures.

**...and Reduce Downtime** - When decontactors are used in lieu of hard-wiring, a fitter can replace a motor safely and efficiently. A blocked submersible pump can be up and running in a matter of minutes instead of hours and with just one person. Operating costs are reduced as re-wiring on site is no longer necessary.





## Duct Sealing RDSS Rayflate Duct Sealing System

Rayflate duct seals are clean, fast, environmentally friendly seals consisting of an inflated bladder of flexible metallic laminate, coated on both sides with a sealant strip. The bladder is wrapped around the cable or cables and inflated with a gas pressure tool.



Reference	Max Duct Size (mm)	Max O/D of Cables in Max Duct Size (Reduce by 5mm for each clip used)	Clip Reference (One clip required per 4 cables)
RDSS-45	45	32	RDSS-Clip45
RDSS-60	60	45	RDSS-Clip60
RDSS-75	75	56	RDSS-Clip75
RDSS-100	100	90	RDSS-Clip100
RDSS-125	125	103	RDSS-Clip125
RDSS-150	150	129	RDSS-Clip150



Rayflate duct seals can be installed using a wide variety of inflation tools which have the capability to inflate the bladder to  $3.0 \pm 0.2$  bar pressure.

The system offers two inflation tools.

- RDSS-IT-16 using disposable gas cylinders (Ref E7572-0160) or
- RDSS-16-SR-AS used in conjunction with an available air supply / pressure bottle / air compressor with pressure input at between 4 and 10 bar.

For larger sized ducts ask us about RDSS-AD-210.







## RISE Duct Seal Water, Gas and Fire Tight

The RISE Duct Sealing System provides an effective and simple solution to all fire, gas and watertight duct sealing requirements. It consists of only 2 components: Rubber insert sleeves and FIWA; a silicone based, fire resistant, water repellent sealant. Thus, making the system quick and easy to install.



### Key Benefits:

- Cost effective.
- High levels of Gas and Water-tightness.
- Few components.
- Suitable for Trefoil cables.
- Quick and easy to install.
- Up to 4 hours fire protection.
- Ease of re-entry for adding cables.
- No frame required.

### Water and Gas Tight

The elasticity and high bonding strength of the FIWA sealant offers a flexible seal, which resists movement, shock and vibration, as well as high pressure. The RISE rubber insert sleeves are applied to provide cable separation and a backing for the application of the FIWA. For Water and Gas-Tight applications our standard 60mm RISE sleeve is sufficient.

### Fire, Water and Gas Tight

Using the type FRR/LEHF RISE insert sleeves at a length of 160mm and applying FIWA Sealant to both faces of the opening provides a fire tight seal. When exposed to heat or flame, the system expands to around 10 times it's original volume, creating a rubber mass surrounding the cables within the penetration. Assuring total conduit sealing protection against fire, heat, toxic and corrosive gases.

Contact our sales office for further details.



## Wire & Cable Pulling Lubricant

### LUB-I-Standard

Water soluble translucent gel which produces low co-efficient of friction for pulling all types of wire and cable.



Part Number	Quantity
LUB-I 0.21	0.21 Litre
LUB-I 0.95	0.95 Litre
LUB-I 3.78	3.78 Litre
LUB-I 18.92	18.92 Litre

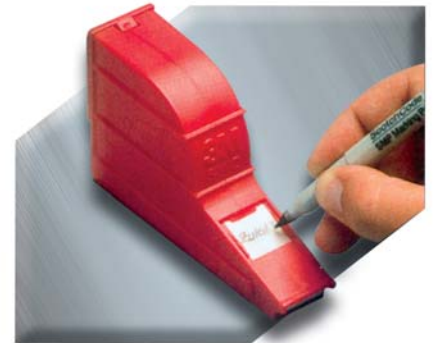
A heavy duty version with higher solid contents (**LUB-P**) is available for long / heavy pulls in 3.78 Litre, 18.92 Litre and 207.9 Litre.

**3M****Scotchcode™ STD**

- Small handheld, refillable, hard wearing polypropylene dispenser.
- Capacity - 10 rolls of tape.
- Supplied pre-loaded with numbers 0-9 (black on white).
- Colour codes and symbols available on request.

**Scotchcode™ Write On Dispenser**

- Durable dispenser.
  - Provides flat, stable surface for writing on marker.
  - Transparent vinyl tape markers resists dirt, oil and heat.
- SLW Large dispenser with labels for cable diameter of 6mm up to 35mm with tape marker and 70 labels - 25mm x 19mm, and SMP pen.
  - SLW-R Refill roll. 70 labels - 25mm x 19mm.
  - SWD Small dispenser with labels for cable diameter of 2.3mm up to 7.8mm with tape marker and 250 labels - 19mm x 8mm, and SMP pen.
  - SWD-R Refill roll. 250 labels - 19mm x 8mm.

**3M****Cable Cleaning & Degreasing Wipes**

Designed specifically to safely remove contaminants such as grease, oil, sealants and cable jelly from switchgear and cables.

Available in 500, 250 and 75 wipe pack sizes.



**3M****Aerosols**

- All 3M aerosols are CFC free.
- For insulation, protection and cleaning of electrical and electronic components and connections.



Product Reference	Application & Characteristics	Size (ml)
1600 Protection Spray	Highly effective anti corrosion protection. Protects against moisture, spray salt water.	400
1601 Clear Insulation Spray	A clear insulating and covering paint based alkyd resin. Resistant to UV light, acids, oil and alkalis and moisture. Hardens into a flexible and resistant film, with excellent adhesion. High dielectric strength.	400
1602 Coloured Insulation Spray	As 1601 but with the addition of red pigments.	400
1605 Dehumidifier	Forms a thin protective film, preventing ingress of moisture. Displace moisture and defrosts frozen areas. Completely neutral towards paints, plastics, rubber and fabrics.	400
1609 Silicone Spray	General purpose spray ideal for preventative maintenance, protection and lubrication. Provides lasting protection against moisture.	400
1617 Zinc Spray	Electrical grade sealer and insulator that air dries in seconds. Ideal cold galvaniser, provides permanent protection against rust and corrosion. Excellent adhesion to iron and steel.	400
1625 Special Contact Cleaner	Loosens dirt, grease and other impurities. Electrically neutral. Leaves no residue.	400
1626 Cleaning Spray	Non-corrosive, can affect plastics. Ideal cleaning for oil, grease resins and tar.	400
1633 Rust Remover	Protects against moisture and corrosion. High penetration potential. Easily releases tightly sealed bolts.	400



# ALROC

## Screen Scoring Tools

To strip non-bonded semi conductive screen off medium voltage cable.

Part Number - **LHM1R**  
 for diameters 14mm to 40mm  
 leaves a semi-conductor strip length of 30 or 40mm

**LHML1R** spare blade for LHM 1R

Part Number - **LHM2R**  
 for diameters 38mm to 60mm leaves a semi-conductor strip length of 30, 40, 45, 55 or 60mm

**LHML2R** spare blade for LHM 2R



## Bonded Screen Removal Tools

To strip bonded semi conductive screen off medium voltage cable.

Part Number - **ASC25-R1** strip length 25mm,  
 for diameters 14mm to 40mm  
 leaves a semi-conductor strip length of 25mm

Part Number - **ASC40-R1** strip length 40mm,  
 for diameters 14mm to 40mm  
 leaves a semi-conductor strip length of 30 or 40mm

Part Number - **ASC25-R2** strip length 25mm,  
 for diameters 38mm to 60mm

Part Number - **ASC40-R2** strip length 30mm or 40mm,  
 for diameters 38mm to 60mm



## Outer Sheath Stripping Tools

Part Number - **PG1**  
 for diameters 8mm to 21mm

Part Number - **PG2**  
 for diameters 21mm to 35mm

Part Number - **PG3**  
 for diameters 26mm to 52mm

Part Number - **PG4**  
 for diameters 47mm to 75mm

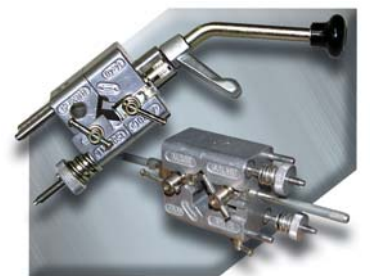


## Insulating Stripping Tools

To strip the insulation off medium voltage cable.

Part Number - **BRM-RD1**  
 for diameters 14mm to 40mm

Part Number - **LH2**  
 for diameters 38mm to 60mm







**GBZ**

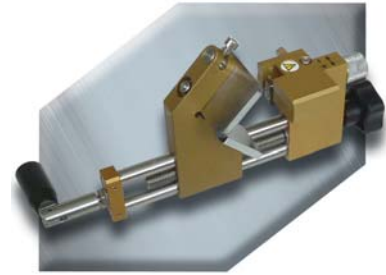
## Bonded Screen Removal Tools

Universal tool for shaving the bonded semiconductor layer of medium voltage cables 10-30 kV+. Working range between 10 and 50mm diameter. At the end of the shaving operation the stop can be made manual by switching off the sliding guide part. Adjustable cutting depth of blade - 0 - 1.2mm (steps of 0.1mm).

Part Number - **GB-P20**

Spare Blade *including screws*

Part Number - **GB-P20-S6**



## Sheath & Insulation Stripper

Dual function tool. This tool strips outer jackets with diameters between 15 and 50mm, and XLPE insulation up to a thickness of 8mm or 10mm. The automatic feed (2 steps) and the 0 position, for a radial cut, guarantees quick and accurate removal of the cable jacket and insulation.

Part Number - **GB-M20**

Part Number - **GB-M20-S5**

*replacement plastic rollers complete*

Part Number - **GB-M20-S8** *replacement blades (5pcs)*  
*(10mm thickness of cut)*

Part Number - **GB-M20-S9**

*insert to protect the insulation screen*



## Chamfering Tool

For removing the sharp edge of the insulation after using the insulation stripping tool where the jointing/terminating system requires a tapered finish. Diameters 15mm to 40mm.

Part Number - **GB-KG-05-3**



## Tool Set

Complete cable preparation tool kit consisting of GBM20 sheath stripper and plastic insert, GBP20 bonded screen peeling tool, GB-KG-05-3 universal chamfering tool and a transportation box.

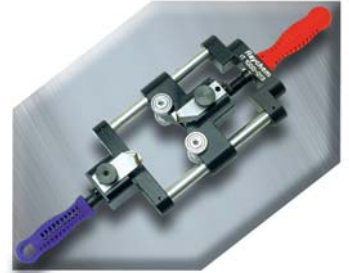
Part Number - **GB-PM20**



## Extra High Voltage Insulation & Bonded Screen Removal Tool

Part Number - **HVIA-STRIPPER-75/150**  
*cable diameters from 75mm to 150mm*

Part Number - **HVIA-STRIPPER-35/90**  
*cable diameters 35mm to 90mm*



## Bonded Screen Removal Tool

*For bonded screens on sector shaped conductors.*

Part Number - **EXRM 0305**



## Low Voltage Cable Preparation Tools

### Sheath Stripping Tool

*Cable cutting and stripping tool for diameters up to 8mm.*

Part Number - **UNI8**



### Sheath Removal Tool

Part Number - **UNI25+**  
*cables 25mm and above*

Part Number - **UNI29**  
*cables 4.5mm to 29mm*

Part Number - **UNI40**  
*cables 19mm to 40mm*



Part Number - **UNIB1**  
*spare blade for UNI29 & UNI40*

Part Number - **UNIB2**  
*spare blade for UNI25+*



## Electricians Scissors

Part Number - **SC1**





## Cable Cutting Tools

*A range of ratchet operated hand tools for cutting cables up to 75mm diameter.*

Part Number - **GB-MKS-300**  
*cutting diameter up to 35mm*

Part Number - **GB-MKS-500**  
*cutting diameter up to 52mm*

Part Number - **GB-MKS-300S**  
*cutting diameter up to 35mm  
with needle roller bearings*

Part Number - **GB-MKS-500S**  
*cutting diameter up to 52mm  
with needle roller bearings*

Part Number - **GB-MKS-600S**  
*two handed tool for  
cutting diameter up to 62mm*

Part Number - **GB-MKS-800S**  
*two handed tool for  
cutting diameter up to 80mm*



*Cable cutter for multi-wire telephone/data and instrument cables.*

Part Number - **GB-MKS-750T**  
*cutting diameter up to 75mm*



## Cable Cutting Tools

### Hand Operated

*Hand operated hydraulic tool specifically designed to cut copper, aluminium-steel cables, steel ropes, copper, aluminium and steel rods. Maximum cutting diameter 24mm.*

Part Number - **HT-TC-026**

*Also available as a cutting head for use with a separate pump.*



### Hand Operated

*Hand operated hydraulic tool for cutting copper, aluminium-steel cables and steel ropes. Its has a two stage hydraulic system to reduce operator time and effort . Maximum cutting diameter 40mm.*

Part Number - **HT-TC-041**

*Also available as a cutting head for use with a separate pump.*







## Cable Cutting Tools

### Hand Operated

Hand operated hydraulic tool specifically designed to cut copper & aluminium cables and telephone cables. Maximum cutting diameter 50mm.

Part Number - **HT-TC-051**

Also available as a cutting head for use with a separate pump.



### Hand Operated

Hand operated hydraulic tool specifically designed to cut copper & aluminium cables and telephone cables. It has a two stage hydraulic system to reduce operator time and effort. Maximum cutting diameter 85mm.

Part Number - **HT-TC-0851**

Also available as a cutting head for use with a separate pump.



### Hydraulic Cutting Head

Hydraulic cutting head for use with various pumps (see crimping tool section). Capable of cutting copper, aluminium and telephone cable up to 120mm in diameter.

Part Number - **TC-120**



## Miscellaneous Cable Jointing Tools

### Wooden Handle Cable Knife

Part Number - **EXRM0607**



### Holding Tool

Holding tool for mechanical connectors. Avoids damage to conductors during installation of mechanical shear bolt connectors.

Part Number - **IT-1000-019**



### Cordless Impact Wrench

For the installation of Tyco Shear Bolt Mechanical Connectors and Lugs.

Part Number - **IT-1000-023**







## Non-Ratchet Handtool

Non-ratchet single stroke tool with a single adjustable indent die. 10 - 120mm<sup>2</sup>.

Part Number - **BM120U**



## Hand Hydraulic Crimping Tool

Two stage hydraulic tool delivers 11.5 tonnes with quick ram advance. Pre-set overload ensures crimp reliability. Accepts wide range of interchangeable die sets.

Part Number - **G10TS**



## Hydraulic Foot Pump

Two stage foot operated pump with operating pressure of 700 Bar (10,000 psi). An audible overload valve operates at the end of the crimping cycle.

Part Number - **FP10**  
(pump)

Part Number - **FP10-2**  
(pump, hose, case)

Part Number - **FP10-4**  
(pump, hose, case, GT10 head)



## Hydraulic Compression Head

The G shaped head enables easy engagement with the cable and connector. 11.5 tonnes compression force. Accepts a wide range of interchangeable die sets with range 10 - 400mm<sup>2</sup>.

Part Number - **G10H**



## Large Compression Head

The latch top arrangement allows easy access to connector particularly with cable joints. Compressive force of 22 tonnes enables installation of copper and aluminium up to 1000mm<sup>2</sup>.

Part Number - **E22**





## Die Sets

A wide range of hexagon and indent die sets to fit G10 type tools.

### Copper Nest Die

Part Number - **UNX\*\*C** (\*\* denotes conductor size)  
10 to 300mm<sup>2</sup>

### Copper Indentor Dies

Part Number - **UP10-25C**  
10, 16 and 25mm<sup>2</sup>

Part Number - **UP35-50C**  
35 and 50mm<sup>2</sup>

Part Number - **UP70-300C**  
70, 95, 120, 150, 240 and 300mm<sup>2</sup>

### Copper Hexagonal Die Set

Part Number - **U\*\*CHEX** (\*\* denotes conductor size)  
10 to 400mm<sup>2</sup>

Recommendations for aluminium connectors available upon request.



## Die Sets

Nest and indent dies for the E22 head.

### Copper Nest Dies

Part Number - **EDNX\*\*\*C** (\*\*\*) denotes conductor size)  
150 to 630mm<sup>2</sup>

Part Number - **EDN\*\*\*C** (\*\*\*) denotes conductor size)  
800 and 1000mm<sup>2</sup>

### Copper Indentor Dies (Requires Adaptor)

Part Number - **EDP150-185C**  
150 and 185mm<sup>2</sup>

Part Number - **EDP240-500C**  
240, 300, 400 and 500mm<sup>2</sup>

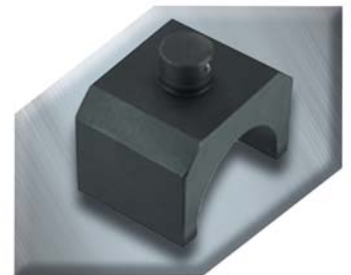
Part Number - **EDP630C**  
630mm<sup>2</sup>

Part Number - **EDP800-1000C**  
800 and 1000mm<sup>2</sup>

### Adaptor To Hold Indentor Inside Head

Part Number - **ED22AD1**  
150 to 500mm<sup>2</sup>

Part Number - **ED22AD2**  
630, 800 and 1000mm<sup>2</sup>





## **Crimping Tools**

### **Ratchet Handtool**

*Ratchet handtool for end sleeves 25, 35 and 50mm<sup>2</sup>.*

Part Number - **HNKE50**



### **Ratchet Tool**

*Ratchet tool for pre-insulated connectors.*

Part Number - **HP1**

*0.2 to 2.5mm<sup>2</sup>*

Part Number - **HP3**

*2.5 to 6mm<sup>2</sup>*



### **Ratchet Tool**

*Ratchet tool for end sleeves (boot lace ferrules).*

Part Number - **ND4**

*0.5 to 4mm<sup>2</sup>*

Part Number - **ND3**

*6 to 16mm<sup>2</sup>*

Part Number - **ND2**

*1 to 6mm<sup>2</sup>*

Part Number - **ND1**

*0.3 to 1.5mm<sup>2</sup>*



### **Ratchet Tool**

*Ratchet tool for un-insulated copper tube terminals.*

Part Number - **HN1**

*0.25 to 10mm<sup>2</sup>*

Part Number - **HN5**

*10 to 16mm<sup>2</sup>*



### **Non-Ratchet Single Stroke Tool**

*Non-ratchet single stroke tool with adjustable indent die for non-insulated copper tube terminals.*

Part Number - **TN70SE**

*6 to 70mm<sup>2</sup>*

Part Number - **TN120SE**

*10 to 120mm<sup>2</sup>*





## Battery Operated Hydraulic Crimping Tools

### Battery Hydraulic Crimping Tool

*Self contained hand tool. Lightweight and balanced for single handed use, 50KN crimping force. Accepts dies from CEMBRE 50KN die set range. 10 to 240mm<sup>2</sup>.*

Part Number - **B51**



### Battery Hydraulic Crimping Tool

*Self contained hand tool. Lightweight and balanced for single handed use, 130KN crimping force. Accepts all semi-circular slotted dies common to most 130KN tools.*

Part Number - **B131-C**



## Hand Hydraulic Crimping Tools

### Compact Hand Hydraulic

*Lightweight, compact hand hydraulic crimper. Pre-set overload when maximum pressure is reached. Accepts CEMBRE 50KN dies. 10 to 240mm<sup>2</sup>.*

Part Number - **HT51**



### Hand Hydraulic

*Hand hydraulic crimping tool. Two stage action consisting of fast advance of ram to engage connector then slower high pressure stage to complete the process. Accepts standard slotted semi circular dies.*

Part Number - **HT120**







## Crimping Tools

### Hydraulic Foot Pump

Two speed foot operated pump developing a maximum pressure of 700 Bar (10,000 psi). Supplied with standard 3m hose complete with female self-lock quick coupler.

Part Number - **PO7000**



### Electric Pump

Portable electro-hydraulic pump, operating at 24V dc by battery for independent use, developing 700 Bar pressure. Supplied with 3m flexible hose complete with male + female self-lock quick couplers, remote control, external battery charger, canvas holdall for carrying accessories.

Part Number - **B70M-P24**



### Hydraulic Compression Head

Standard G-shaped head complete with quick automatic coupler for connection to hydraulic pump. Accepts standard interchangeable die sets.

Part Number - **RHC131**



### Wide Jaw G Tool

Wide jaw G tool, particularly suitable for cable jointing applications on large cables. Complete with quick automatic coupler for connection to hydraulic pump. Accepts standard interchangeable die sets.

Part Number - **RHC131L**





**Die Sets**

**Hexagonal Die Sets**

*A range of hexagon die sets for use with CEMBRE 5KN tools (HT50 and B50).*



- Part Number - **ME2-50** - 10mm<sup>2</sup>
- Part Number - **ME3-50** - 16mm<sup>2</sup>
- Part Number - **ME5-50** - 25mm<sup>2</sup>
- Part Number - **ME7-50** - 35mm<sup>2</sup>
- Part Number - **ME10-50** - 50mm<sup>2</sup>
- Part Number - **ME14-50** - 70mm<sup>2</sup>
- Part Number - **ME19-50** - 95mm<sup>2</sup>
- Part Number - **ME24-50** - 120mm<sup>2</sup>
- Part Number - **ME30-50** - 150mm<sup>2</sup>
- Part Number - **ME37-50** - 185mm<sup>2</sup>

*For information on selecting die sets for flexible and aluminium conductors, please contact our sales office.*

**Hexagonal Die Sets**

*A range of semi-circular grooved dies to fit HT120 crimping heads.*

- Part Number - **ME2-C** - 10mm<sup>2</sup>
- Part Number - **ME3-C** - 16mm<sup>2</sup>
- Part Number - **ME5-C** - 25mm<sup>2</sup>
- Part Number - **ME7-C** - 35mm<sup>2</sup>
- Part Number - **ME10-C** - 50mm<sup>2</sup>
- Part Number - **ME14-C** - 70mm<sup>2</sup>
- Part Number - **ME19-C** - 95mm<sup>2</sup>
- Part Number - **ME24-C** - 120mm<sup>2</sup>
- Part Number - **ME30-C** - 150mm<sup>2</sup>
- Part Number - **ME37-C** - 185mm<sup>2</sup>
- Part Number - **ME48-C** - 240mm<sup>2</sup>
- Part Number - **ME60-C** - 300mm<sup>2</sup>
- Part Number - **ME80-C** - 400mm<sup>2</sup>





## Die Sets

### **Copper Nests & Indentor Die**

Part Number - <b>MA2-C</b>	- 10mm <sup>2</sup>
Part Number - <b>MA3-C</b>	- 16mm <sup>2</sup>
Part Number - <b>MA5-C</b>	- 25mm <sup>2</sup>
Part Number - <b>MA7-C</b>	- 35mm <sup>2</sup>
Part Number - <b>MA10-C</b>	- 50mm <sup>2</sup>
Part Number - <b>MA14-C</b>	- 70mm <sup>2</sup>
Part Number - <b>MA19-C</b>	- 95mm <sup>2</sup>
Part Number - <b>MA24-C</b>	- 120mm <sup>2</sup>
Part Number - <b>MA30-C</b>	- 150mm <sup>2</sup>
Part Number - <b>MA37-C</b>	- 185mm <sup>2</sup>
Part Number - <b>MA48-C</b>	- 240mm <sup>2</sup>
Part Number - <b>MA60-C</b>	- 300mm <sup>2</sup>



### **Copper Indentor Die**

Part Number - <b>PA10-C</b>	- 10, 16, 25, 35 and 50mm <sup>2</sup>
Part Number - <b>PA24-C</b>	- 70, 95 and 120mm <sup>2</sup>
Part Number - <b>PA48-C</b>	- 150, 185 and 240mm <sup>2</sup>
Part Number - <b>PA60-C</b>	- 300mm <sup>2</sup>

*For information on selecting die sets for flexible and aluminium conductors, please contact our sales office.*

### **Crimping Gauges for Hydraulic Tools**

*MPC 1 device (shown) complete with test adaptor set, to measure the maximum oil pressure on all Cembre Tools.*

Part Number - **MPC 1**

*MPC 2 device complete with test die set to measure the maximum force developed by Cembre Tools reference: HT131C, HT131L-C, HT120, RHC131, B131-C, B131C-L.*

Part Number - **MPC 2**

*MPC 3 device complete with test die set to measure the maximum force developed by Cembre Tools reference: HT43, HT51, RH50, RHM50, HT61, RH61, B46, B51, B62.*

Part Number - **MPC 3**







## Operating Poles

Bowthorpe operating poles are manufactured from high quality glass reinforced epoxy resin, suitably assembled and finished to comply with relevant design requirements. The present range reflects more than 30 years experience of supplying the World's Power Authorities.

The standard range falls into three groups:

### Standard Series

Normally supplied in 1.2m lengths (0.69m lengths available to order). 40mm diameter, fitted with copper alloy interlocking clips where appropriate. Foam filled versions available (suffix FF).

#### Bottom Section

Bottom section complete with rain shield.

Part Number - **P4B**

Intermediate section.

Part Number - **P4I**



#### Top Section

Top section with riveted termination.

Part Number - **P4TR**



#### Top Section

Top section with concealed joint termination.

Part Number - **P4TCJ**



#### Top Section

Top section with spring clip termination.

Part Number - **P4TS**



#### Top Section Adaptor

Top section adaptor to convert intermediate section to top section spring clip termination specification.

Part Number - **PI/PTS**







## Operating Poles

### GR Series

*Specially developed for tower and sub-station applications. Fully tested and approved to ESI standard 41-21 (draft). Supplied with non-slip hand grip and stainless steel interlocking clips where appropriate. Available with rivited and concealed joint top section terminations.*

#### **Type II Rivited Termination**

*Two sections each 1.2m long x 40mm diameter retained together with chain, with rivited top section termination.*

Part Number - **GR2R**



#### **Type II Concealed Joint Termination**

*Two sections each 1.2m long x 40mm diameter retained together with chain, with concealed joint top section termination.*

Part Number - **GR2CJ**



#### **Type III**

*Sections each 1.2m long x 40mm diameter. Suitable for fitting into bottom of Type I and Type II to extend length.*

Part Number - **GR3**





## Operating Sockets

### **Ring Type**

*Operating socket for ring type clamps, suitable for riveted top section poles (for use with clamps 420R, 204R, S9BR).*

Part Number - **PHS4S** (Window)



### **Pole Heads**

*Pole heads for use with spring clip top section poles (P4TS and Adaptor PI/PTS).*

#### **For Bowthorpe Earth Clamps**

Part Number - **PH031**



#### **Temporary Earthing Hook**

Part Number - **PHTEH**

#### **Universal Adaptor**

Part Number - **PHUA**

#### **Splash Plate**

Part Number - **PHSP**



#### **For Universal Fuse Cut-Outs**

Part Number - **PH437**

#### **For J&P Fuse Cut-Outs**

Part Number - **PH380**

#### **For LEL Fuse Cut-Outs**

Part Number - **PH458**





## Tree Pruning Applications

### Poles

Heavy duty section where additional rigidity is required. 1.3m long x 49mm diameter fitted with stainless steel interlocking clip.

Part Number - **HP4I**

### Pole Adaptor

Adaptor to enable standard series intermediate and top section poles to be connected to the HP4I section.

Part Number - **HP/PI**

*NOTE: To fit the tree pruner and pruning saw to the HP41 section, an adaptor HPIPI and a standard range top section (P4TS) or top section adaptor (PIIPTS) are required.*



### Tree Pruner

Part Number - **PH712C**



### Pruning Saw Complete With Sheath

Part Number - **PH440S**







## Gas Torches & Accessories

The Tyco FH1630 torch assembly for installation of heat shrink accessories offers maximum burning efficiency and best balance of surface pre-heat.

### Torch Handle

Torch handle with shut off valve for use with a FH1630-S nozzles, PIE regulators and hoses.

Nozzle connection thread R<sup>3</sup>/<sub>8</sub>" right.

Hose connection thread R<sup>3</sup>/<sub>8</sub>" left.

Part Number - **FH-1630-S-HNZ**



### Torch Handle

Torch handle with holder and shut off valve and pilot/full flame lever for all FH1630-S nozzles, PIE regulators and hoses.

Nozzle connection thread R<sup>3</sup>/<sub>8</sub>" right.

Hose connection thread R<sup>3</sup>/<sub>8</sub>" left.

Part Number - **FH-1630-S-HSZ**



### Nozzles

Nozzles for FH-1630-S handles.

Part Number - **FH-1630-S-BN28**

28mm diameter

Part Number - **FH-1630-S-BN38**

38mm diameter

Part Number - **FH-1630-S-BN50**

50mm diameter

Part Number - **FH-1630-S-PN17**

17mm diameter



### Torch Kit

Red enamel steel box containing BN28, BN38 and PN17 nozzles, torch handle HSZ, constant pressure regulator R1, automatic cut off valve CV and 5m high pressure hose.

Part Number - **FH-1630-S-MC10**



### Simple Torch Assembly

Simple torch assembly consisting of nozzle BN38, torch handle HSZ and 5m hose SW5.

Part Number - **FH-1630-S-TS1**





### **Torch Handle**

*Torch handle with piezo automatic ignition. Gas flow when trigger pressed only.*

*Nozzle connection bayonet socket.*

*Hose connection thread R<sup>3</sup>/<sub>8</sub>" left.*

Part Number - **FH-1630-PIE**



### **Nozzles**

*Nozzles for Piezo handles.*

Part Number - **FH-1630-PIE-BN28**

*28mm diameter*

Part Number - **FH-1630-PIE-BN38**

*38mm diameter*

Part Number - **FH-1630-PIE-BN50**

*50mm diameter*

Part Number - **FH-1630-PIE-PN18**

*18mm diameter*



### **Constant Pressure Regulator**

*Constant pressure regulator for all FH-1630 hoses. Suitable for propane gas bottles from 5kg to 11kg. 2 bar constant gas pressure.*

Part Number - **FH-1630-PIE-R1**

*Gas bottle connection*

*W21.8 x 1/4" LH DIN/COMBI*

Part Number - **FH-1630-PIE-R2**

*Gas bottle connection*

*W20 x 1/4" LH POL*

Part Number - **FH-1630-PIE-R3**

*Gas bottle connection*

*W20 x 1/4" LH SHELL*



### **High Pressure Hoses**

*High pressure hoses for all FH-1630 handles. Fitted with screw connections for FH1630 constant pressure regulator and handles.*

Part Number - **FH-1630-PIE-SW4**

*4m long*

Part Number - **FH-1630-PIE-SW5**

*5m long*

Part Number - **FH-1630-PIE-SW10**

*10m long*





**Automatic Cut Off Valve**

Automatic cut off valve. Fitted between the hose and the constant pressure regulator - cuts off the gas supply in the event of damage to the hose or handle.

Part Number - **FH-1630-PIE-CV**



**Safety Valve**

Safety Valve - combining the constant pressure regulator (FH-1630-PIE-R1) and the automatic cut off valve.

Part Number - **FH-1630-PIE-LGS**



**Torch Holder**

Torch holder - snap fitted on the gas bottle providing a convenient parking place for the gas torch in on site conditions.

Part Number - **FH-1630-TH229**

Nominal bottle diameter - 229mm

Part Number - **FH-1630-TH300**

Nominal bottle diameter - 300mm





## Tyco Electronics Bowthorpe EMP

### Cable Spiking Kit

The Bowthorpe cable spiking kit is designed to prove a selected cable is dead before site work begins. The kit consists of a hand operated hydraulic pump connected to the spiker head by a 6m long fully insulated hose (longer lengths can be supplied). All parts are supplied in a stout wooden case. Cables up to 102mm in diameter can be pierced by the diamond shaped chisel.



Part Number - **BOW-F-CSTE**

**WARNING:** An independent earth lead **MUST** be fitted to the cable spiker body before the equipment is used. **Failure to do so could have serious consequences for the operator in the event of a live cable being pierced.**

## Lucy Lighting Lucy Cabinet Keys

### Lucy 'T' Key

Lucy 'T' key for pillar shell doors

Part Number - **T-KEY**

### Lucy Triangular Key

Lucy triangular headed pillar steel door key

Part Number - **TRI-KEY**



### Cable Drum Jacks & Spindles

Screw type fabricated steel.

Part Number - **J3CS** 3 Tonne

Part Number - **J6CS** 6 Tonne

Part Number - **J8CS** 8 Tonne

Various weights of spindles available. Please contact our sales office. A complete range of cable rollers is also available. Please contact our sales office with your requirements.



### Cable Pulling Stockings

High tensile galvanised steel stockings.

Part Number Overall Length Cable Diameter

<b>CS 11*</b>	305mm	6 - 13mm
<b>CS 12*</b>	430mm	13 - 19mm
<b>CS 13*</b>	510mm	19 - 25mm
<b>CS 14*</b>	610mm	25 - 38mm
<b>CS 15*</b>	735mm	38 - 50mm
<b>CS 16*</b>	865mm	50 - 63mm
<b>CS 17*</b>	990mm	63 - 89mm
<b>CS 18*</b>	990mm	89 - 115mm



Also available in stainless steel or kevlar

\*Suffix - S = Single Eye D = Double Eye L = Lace Up



**One telephone call is all it takes to reserve a crimping tool for collection or despatch to site.**

***Competitive rates for daily, weekly or extended hire.***

## **Tools Available For Hire**

### **Manual**

*Prysmian / Cembre BM120 Type Non Ratchet  
10 - 120mm<sup>2</sup>.*

### **Small Hydraulic**

*Prysmian / Cembre G10TS Hand Hydraulic Type and  
FP10 Foot Operated Type. 10 - 400mm<sup>2</sup>.*

### **Medium Hydraulic**

*Cembre ECW-H3D up to 630mm<sup>2</sup>.*

### **Large Hydraulic**

*Prysmian / Cembre E22H Type with Foot Pump.  
Copper Conductors to 1000mm<sup>2</sup>.*

### **Hydraulic Cutter**


*Cembre TC120 Type. Maximum Cutting Diameter 120mm.*

### **Also Drum Jacks & Cable Rollers**

***Extensive Stocks of Prysmian and Cembre Tooling.***

***Contact one of our sales offices on the numbers below:***

 ***UK / NW / Export - 01978 340450***

 ***Central - 01785 825970***

 ***Liverpool - 0151 9339022***

 ***Smith Electrical - 0141 6212060***





## Order Value and Carriage Charges

The Cable Services Group reserve the right to make a charge for delivery for orders valued at under £100 net value or where the customer has requested urgent delivery by a particular time; the Cable Services Group will not be held responsible for consequential losses incurred as a result of late delivery.

## Claims

All claims arising from shortage, non-delivery, or damaged goods can only be considered if they are received in writing within three days of delivery.

## Returns

Returns to the Cable Services Group, of material supplied in accordance with the customers order requirements, will only be accepted with prior approval; and the Cable Services Group reserve the right to apply a handling charge commensurate with the likely consequences of taking goods back into stock.

## Retention Of Title

The property in the material supplied by the Cable Services Group will not pass to the customer until payment in full has been received from the customer.

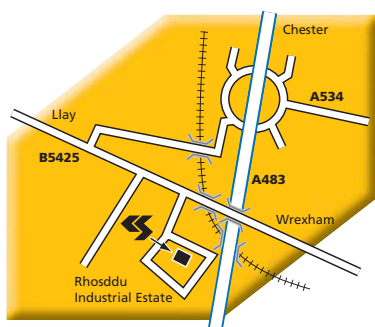
## Terms of Payment

Payment at the end of the month following the month of delivery, unless specifically agreed in writing with the Cable Services Group of Companies. If accounts are not settled within the required period, statutory interest may be claimed from the date of invoice.

A complete set of our Conditions of Sale is supplied with each order and is also available as a downloadable pdf document from our website ([www.cableservices.co.uk](http://www.cableservices.co.uk)).

The Cable Services Group are always pleased to welcome new credit account customers , If required a credit account application form can be downloaded from our website. ([www.cableservices.co.uk](http://www.cableservices.co.uk)).

## Locations



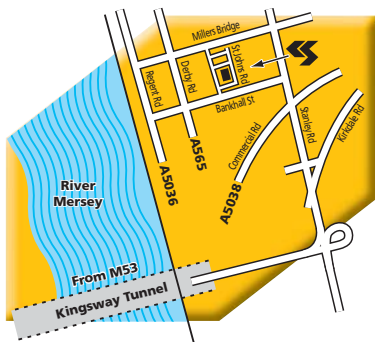
### Wrexham

Rhosddu Industrial Estate,  
Rhosrobin,  
Wrexham,  
LL11 4YZ.



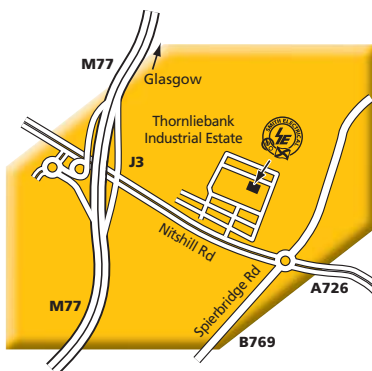
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### Glasgow

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## KEEP IN TOUCH

If you would like to be kept in touch with updates to this catalogue or be informed of periodical 'Special Offers' please e-mail your contact details to [info@cableservices.co.uk](mailto:info@cableservices.co.uk)



# CABLE SERVICES



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