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ELLIS

Holding Power

Electrical Product Catalogue

ELLIS

Holding Power

Ellis design and manufacture solutions for cabling environments globally.

With 50 years of innovation and testing behind us, we are recognised as the world's leading supplier of safety critical electrical cable cleats. Every day, vital operations and services such as the channel tunnel rail link, nuclear power plants and oil rigs rely on our products to keep them running safely.

Holding Power is our guarantee that Ellis cable cleats will contain short circuit forces – protecting your people, power and plant. Without fail.

Tested to Perfection

Since the birth of the company, we've been working with independent test houses to raise safety standards within the industry.

We understand the science behind the appropriate standards, but we know that results from short-circuit testing are what really counts. Testing is the only way to prove that a cleat will do its job.

We undertake regular testing in accordance with the international standard IEC61914:2009, and the results show that our products exceed industry requirements. This uncompromising quality and our 'safety first' culture, guarantee your protection.

We're more than happy to make available reports and video footage from our tests.

Trust Ellis

Our focus is on specialist cable cleats, pure and simple. No other company offers a wider range and no other company puts as much time and effort into testing and developing cleats. We have earned the reputation of being the industry experts.

And that's the level of assurance you need when the safety of your people and your company is on the line. We provide failsafe devices that are fit for purpose and last a lifetime. When it's needed, you can trust our cleats to perform.

Innovation with Insight

Innovative product design and development is our passion. At the heart of this is listening to our customers, so we work to anticipate your future requirements. On top of this, the knowledge we gain from testing means there is robust science behind our new product development – not just ideas.

Precision Engineering

Ellis products are precision manufactured and immensely strong. So as you would expect, we're committed to investing in new technology and have a state of the art production facility where rapid prototyping and bespoke solutions are the norm.

CONTENTS

ELLIS

Emperor

Max S/C Test Level	Cleat Spacing
156kA	600mm
195kA	300mm
235kA	225mm

Stainless Steel Cable Cleats
Patent No. UK Patent GB 233 9237

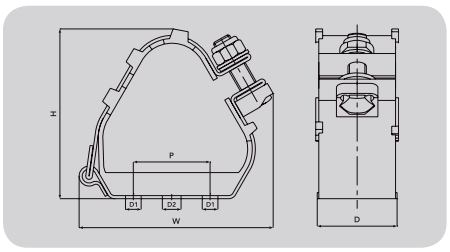
When you need cleats that withstand the highest levels of short-circuit.

The Emperor range offers the ultimate protection against the harshest conditions, and its unique design means it can be quickly installed. Manufactured in Type 316L stainless steel, Emperor cleats are available in multiple sizes with range-taking capability, to suit trefoil or single cables.

To protect and cushion the cables during short circuit conditions, the cleat is supplied with an integral Low Smoke and Fume Polymeric liner and base pad.

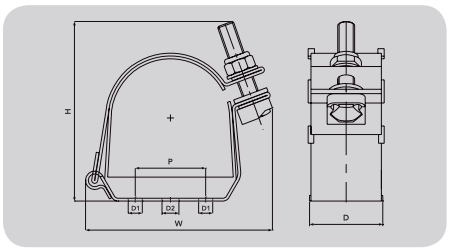
We recommend that the Emperor is fixed using either two 10mm bolts, or a single 12mm bolt (not supplied but available as extras). Alternative bolt recommendations on request. For a more economical installation, cleats can be spaced more widely, with a retention strap fitted in between.

(See page 13 for details.)



SELECTION TABLE FOR TREFOIL CABLE APPLICATION

Part No.	Cable Range		Dimensions mm					Weight g
	Min Dia. mm	Max Dia. mm	W	H	D	P	Fixing Holes	
ER19-23	19	23	96	83	54	25	2 x M10 + 1 x M12	425
ER23-28	23	28	96	83	54	25	2 x M10 + 1 x M12	425
ER27-32	27	32	97	88	54	25	2 x M10 + 1 x M12	440
ER30-35	30	35	99	91	54	25	2 x M10 + 1 x M12	445
ER33-38	33	38	103	95	54	25	2 x M10 + 1 x M12	460
ER36-42	36	42	124	100	54	50	2 x M10 + 1 x M12	600
ER40-46	40	46	125	106	54	50	2 x M10 + 1 x M12	605
ER44-50	44	50	130	117	54	50	2 x M10 + 1 x M12	630
ER48-55	48	55	132	121	54	50	2 x M10 + 1 x M12	640
ER51-58	51	58	136	128	54	50	2 x M10 + 1 x M12	650
ER55-62	55	62	160	135	54	75	2 x M10 + 1 x M12	810
ER59-66	59	66	163	143	54	75	2 x M10 + 1 x M12	825
ER63-70	63	70	166	151	54	75	2 x M10 + 1 x M12	850
ER67-74	67	74	169	158	54	75	2 x M10 + 1 x M12	850
ER71-78	71	78	172	165	54	75	2 x M10 + 1 x M12	890
ER74-82	74	82	177	171	54	75	2 x M10 + 1 x M12	890
ER77-85	77	85	183	177	54	75	2 x M10 + 1 x M12	905
ER82-88	82	88	191	187	54	75	2 x M10 + 1 x M12	820
ER88-96	88	96	207	203	54	75	2 x M10 + 1 x M12	890
ER96-103	96	103	221	218	54	75	2 x M10 + 1 x M12	940
ER103-111	103	111	237	235	54	75	2 x M10 + 1 x M12	950
ER111-119	111	119	253	250	54	75	2 x M10 + 1 x M12	1010
ER119-128	119	128	265	275	54	75	2 x M10 + 1 x M12	1220



SELECTION TABLE FOR SINGLE CABLE APPLICATION

Part No.	Cable Range		Dimensions mm					Weight g
	Min Dia. mm	Max Dia. mm	W	H	D	P	Fixing Holes	
ES32-39	32	39	91	89	54	25	2 x M10 + 1 x M12	450
ES37-45	37	45	96	93	54	25	2 x M10 + 1 x M12	470
ES44-52	44	52	99	98	54	25	2 x M10 + 1 x M12	480
ES51-59	51	59	103	102	54	25	2 x M10 + 1 x M12	490
ES58-66	58	66	109	101	54	25	2 x M10 + 1 x M12	500
ES65-73	65	73	111	103	54	25	2 x M10 + 1 x M12	510
ES73-85	73	85	135	112	54	50	2 x M10 + 1 x M12	640
ES84-94	84	94	135	135	54	50	2 x M10 + 1 x M12	660
ES94-118	94	118	160	150	54	50	2 x M10 + 1 x M12	710
ES118-130	118	130	175	160	54	75	2 x M10 + 1 x M12	900
ES127-150	127	150	180	180	54	75	2 x M10 + 1 x M12	940

Special options: Other sizes available on request.

c UL US LISTED ER33-38 4CG8

c UL US LISTED ES58-66 4CG8

(American Bureau of Shipping) Type Approval.

London Underground

Emperor Cable Cleats are compliant with the requirement of London Underground Standard 1-085. Product Register No. 362.

Vulcan +

Max S/C Test Level	Cleat Spacing
104kA	600mm
132kA	300mm

Stainless Steel Cable Cleats
Patent No. UK Patent GB 236 1029

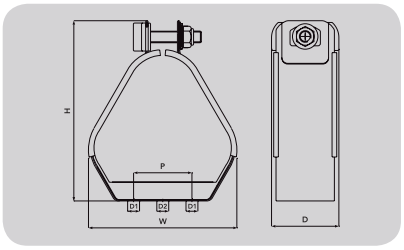
When you need cleats that withstand moderate levels of short-circuit.

Our Vulcan + cleats have a unique compact design so they can be easily installed, even when space is limited. Vulcan + cleats are available in multiple sizes with range-taking capability, to suit trefoil, single, quad or bundled cables.

Manufactured in Type 316L stainless steel, Vulcan + offer excellent protection against the harshest environmental conditions. To protect and cushion the cables during short-circuit conditions, the cleat comes with an integral Low Smoke and Fume Zero Halogen Polymeric liner and base pad.

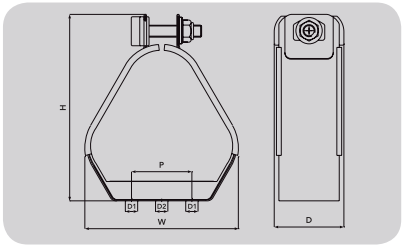
We recommend fixing VRT+ using one 10mm bolt for sizes 00 to 09, and one or two 10mm bolts for sizes 10 to 20. For VRQ+ use one 10mm bolt for sizes 01 to 06, and one or two 10mm bolts for sizes 07 to 09 (not supplied but available as extras). Alternative bolt recommendations on request. For a more economical installation, cleats can be spaced more widely, with a retention strap fitted in between.

(See page 13 for details.)



SELECTION TABLE FOR TREFOIL AND SINGLE CABLE APPLICATION

Part No.	Trefoil Cable Range		Single Cable Range		Dimensions mm					Weight g
	Min Dia. mm	Max Dia. mm	Min Dia. mm	Max Dia. mm	W	H	D	P	Fixing Holes	
VRT+00	19	24	30	42	60	93	54	n/a	1 x M10	251
VRT+01	23	28	38	50	63	98	54	n/a	1 x M10	258
VRT+02	27	32	43	58	72	106	54	n/a	1 x M10	269
VRT+03	30	35	49	64	79	112	54	n/a	1 x M10	279
VRT+04	33	38	55	70	85	118	54	n/a	1 x M10	284
VRT+05	36	42	58	75	96	125	54	n/a	1 x M10	319
VRT+06	40	46	63	84	105	133	54	n/a	1 x M10	331
VRT+07	44	50	73	90	112	140	54	n/a	1 x M10	391
VRT+08	48	55	83	100	121	149	54	n/a	1 x M10	405
VRT+09	51	58	86	104	126	154	54	n/a	1 x M10	411
VRT+10	55	62	88	110	134	162	54	50	3 x M10	442
VRT+11	59	66	90	115	143	170	54	50	3 x M10	453
VRT+12	63	70	100	125	152	177	54	50	3 x M10	460
VRT+13	67	74	107	132	161	185	54	75	3 x M10	524
VRT+14	71	78	120	145	169	192	54	75	3 x M10	536
VRT+15	74	82	125	150	176	199	54	75	3 x M10	542
VRT+16	77	85	132	153	183	205	54	75	3 x M10	544
VRT+17	81	89	136	156	190	216	54	75	3 x M10	618
VRT+18	85	93	139	159	200	225	54	75	3 x M10	628
VRT+19	89	97	142	162	200	235	54	75	3 x M10	637
VRT+20	93	101	150	170	215	240	54	75	3 x M10	646



SELECTION TABLE FOR QUAD CABLE APPLICATION

Part No.	Quad Cable Range		Dimensions mm					Weight g
	Min Dia. mm	Max Dia. mm	W	H	D	P	Fixing Holes	
VRQ+01	23	25	68	110	54	n/a	1 x M10	284
VRQ+02	26	27	70	113	54	n/a	1 x M10	286
VRQ+03	28	31	78	128	54	n/a	1 x M10	318
VRQ+3A	31	35	90	138	54	n/a	1 x M10	350
VRQ+04	35	42	103	148	54	n/a	1 x M10	378
VRQ+05	43	47	120	165	54	n/a	1 x M10	452
VRQ+06	48	50	121	170	54	n/a	1 x M10	467
VRQ+07	51	57	140	190	54	50	3 x M10	486
VRQ+08	58	63	150	200	54	50	3 x M10	499
VRQ+09	64	70	170	218	54	75	3 x M10	581

c UL US LISTED VRT+06 4CG8

c UL US LISTED VRQ+03 4CG8

(American Bureau of Shipping) Type Approval.

London Underground

Vulcan VRT+ Cable Cleats are compliant with the requirement of London Underground Standard 1-085. Product Register No. 361.

Alpha

Max S/C Test Level	Cleat Spacing
96kA	600mm

Aluminium Trefoil Cleats
Patent No.
UK Patent GB 240 5900

A new, stronger alternative to the traditional aluminium cleat.

Manufactured in extruded aluminium (6000 series) to BS EN 755. Our Alpha cleats are even more robust than our original trefoil cast cleats. Alpha cleats come with easy one bolt fixing and zinc plated steel closing fasteners.

Alpha cleats are available with two base options: Aluminium or Polymer. The polymeric base can be used to prevent galvanic corrosion, where this could be a problem.

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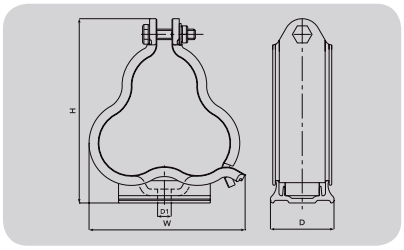
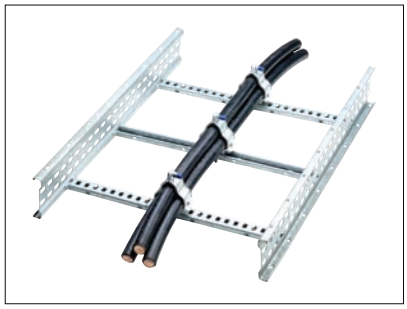


Part No.	Part No.	Trefoil Cable Range		Dimensions mm			Fixing Holes	Weight g
Aluminium Base	LSF Zero Halogen Base	Min Dia. mm	Max Dia. mm	W	H	D		
ALP01-AN0	ALP01-AN1	23.2	25.1	76	93	48.5	1 x M10	168
ALP02-AN0	ALP02-AN1	25.1	27.1	79	96	48.5	1 x M10	178
ALP03-AN0	ALP03-AN1	27.1	29.3	82	101	48.5	1 x M10	185
ALP04-AN0	ALP04-AN1	29.3	31.7	86	105	48.5	1 x M10	195
ALP05-AN0	ALP05-AN1	31.7	34.2	91	110	48.5	1 x M10	205
ALP06-AN0	ALP06-AN1	34.2	37.0	96	116	48.5	1 x M10	217
ALP07-AN0	ALP07-AN1	37.0	40.0	101	121	48.5	1 x M10	229
ALP08-AN0	ALP08-AN1	40.0	43.2	106	127	48.5	1 x M10	241
ALP09-AN0	ALP09-AN1	43.2	46.7	113	134	48.5	1 x M10	255
ALP10-AN0	ALP10-AN1	46.7	50.5	119	141	48.5	1 x M10	272
ALP11-AN0	ALP11-AN1	50.5	54.6	127	148	48.5	1 x M10	288
ALP12-AN0	ALP12-AN1	54.6	59.0	135	156	48.5	1 x M10	307
ALP13-AN0	ALP13-AN1	59.0	63.8	144	165	48.5	1 x M10	327
ALP14-AN0	ALP14-AN1	63.8	69.0	153	175	48.5	1 x M10	348
ALP15-AN0	ALP15-AN1	69.0	74.6	163	186	48.5	1 x M10	372

Special options:
Single versions available to specific cable diameters.
Polyester coating and alternative fasteners are available on request.



c UL US LISTED
ALP05-ANO 4CG8

(American Bureau of Shipping)
Type Approval.

London Underground

The Alpha Cable Cleats are compliant with the requirement of London Underground Standard 1-085. Product Register No. 360.

Vari-cleat

Max S/C Test Level	Cleat Spacing
101kA	600mm

Stainless Steel and Aluminium Cable Cleats
Patent No.
UK Patent GB 226 1014

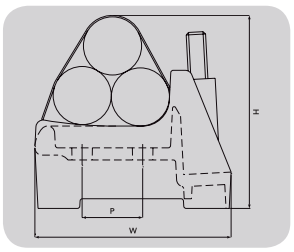
When you need compact cleats where the base can be fixed before the cables are in position.

Vari-cleats withstand moderate levels of short-circuit and have a separate over-strap that can be installed once your cables are in position. Available for trefoil, single or bundled cables, Vari-cleats come in over 30 sizes with range-taking capability.

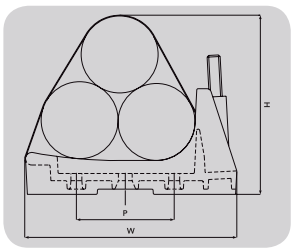
The patented design includes a base cast in aluminium (optional polyester or Kelvar coatings are available on request). The over-strap is manufactured from Type 316L stainless steel (a silicone Low Smoke and Fume liner is available on request).

We recommend Vari-cleats are fixed using either 8mm, 10mm or 12mm bolts (not supplied but available as extras). Alternative bolt recommendations on request. For a more economical installation, cleats can be spaced more widely with a retention strap fitted in between.

(See page 13 for details.)



Base Sizes AN, BN & CN



Base Sizes DN, EN, FN, GN & HN

SELECTION TABLE FOR SINGLE AND TREFOIL APPLICATION

Part No. - Suffix (See below)	Cable Range No Liner		Cable Range With Liner		Dimensions mm				Fixing Holes	Weight g
	Trefoil Dia. mm	Single Dia. mm	Trefoil Dia. mm	Single Dia. mm	W	H	D	P		
VC-AN1-	21-24	36-43	19-22	31-38	82	80	74	25	2 x M8	373
VC-AN2-	22-26	41-48	21-24	36-43	82	84	74	25	2 x M8	373
VC-AN3-	24-28	44-51	23-26	39-46	83	88	74	25	2 x M8	373
VC-AN4-	26-30	49-54	25-29	44-51	86	92	74	25	2 x M8	373
VC-BN1-	29-33	51-59	27-31	46-54	97	94	74	25	2 x M8	430
VC-BN2-	30-35	55-63	29-33	50-58	97	97	74	25	2 x M8	430
VC-BN3-	32-37	60-68	30-36	55-63	100	101	74	25	2 x M8	430
VC-BN4-	34-38	64-70	33-38	59-68	104	105	74	25	2 x M8	430
VC-CN1-	37-42	68-76	35-40	63-71	117	105	76	25	2 x M8	490
VC-CN2-	39-44	72-81	37-42	67-76	117	109	76	25	2 x M8	490
VC-CN3-	42-47	76-85	39-45	71-80	118	115	76	25	2 x M8	490
VC-CN4-	44-48	81-87	44-48	76-86	124	121	76	50	2 x M8	490
VC-DN1-	47-53	86-96	47-51	81-91	138	126	78	50	2 x M8 + 1 x M10	610
VC-DN2-	50-56	91-100	49-54	86-95	141	132	78	50	2 x M8 + 1 x M10	610
VC-DN3-	54-59	96-105	52-57	91-100	147	138	78	50	2 x M8 + 1 x M10	610
VC-DN4-	56-60	101-106	55-60	96-106	153	144	78	75	2 x M8 + 1 x M10	610
VC-EN1-	59-63	105-112	58-62	100-107	163	147	80	75	2 x M8 + 1 x M10	730
VC-EN2-	62-67	111-118	61-66	106-113	167	154	80	75	2 x M8 + 1 x M10	730
VC-EN3-	65-70	118-125	64-69	113-120	174	160	80	75	2 x M8 + 1 x M10	730
VC-EN4-	68-74	125-132	67-73	120-127	181	167	80	75	2 x M8 + 1 x M10	730
VC-FN1-	71-76	125-140	69-74	120-135	187	170	82	90	3 x M12	880
VC-FN2-	74-80	132-145	72-78	128-140	194	177	82	90	3 x M12	880
VC-FN3-	78-84	139-152	76-82	134-147	201	185	82	90	3 x M12	880
VC-FN4-	82-88	148-160	80-86	143-155	210	193	82	90	3 x M12	880
VC-GN1-	84-91	145-160	82-89	140-155	217	197	82	114	3 x M12	970
VC-GN2-	88-95	155-170	86-93	150-165	225	205	82	114	3 x M12	970
VC-GN3-	92-99	165-180	90-97	160-175	233	213	82	114	3 x M12	970
VC-GN4-	96-103	175-190	94-101	170-185	240	221	82	114	3 x M12	970
VC-HN1-	98-106	170-190	96-104	165-185	247	229	84	136	3 x M12	1170
VC-HN2-	102-110	180-200	100-108	175-195	255	237	84	136	3 x M12	1170
VC-HN3-	106-114	190-205	104-112	185-200	263	245	84	136	3 x M12	1170
VC-HN4-	110-118	200-215	108-116	195-210	271	252	84	136	3 x M12	1170

Suffix 1	Suffix 2	Suffix 3
A No liner **B** Linered **C** Heavy Duty No liner **D** Heavy Duty Linered	**N** Natural **P** Polyester - Black **K** Kelvar **C** Kelvar & Flange Nut	**0** Standard Holes

Special options:
Cleats for multi-cable bundles available on request.

Atlas

Max S/C Test Level	Cleat Spacing
112kA	750mm

Galvanized Steel Cable Cleats
Patent No.
UK Patent GB 228 4444

When you need cleats that withstand high levels of short-circuit, and that have more fixing options.

Atlas cable cleats are available for trefoil and single cable applications and can be fixed using one bolt, two bolts or a framing channel fixing. Manufactured in galvanised steel, Atlas cleats are supplied with a stainless steel top bolt to eliminate eddy currents. To protect and cushion the cables during short circuit conditions, the cleat comes with integral Low Smoke and Fume Zero Halogen Polymeric pads. For Atlas Intermediate Strap type AS please contact our sales office.

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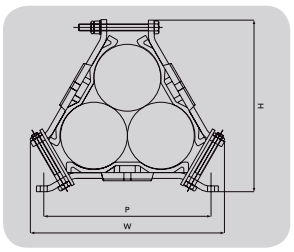

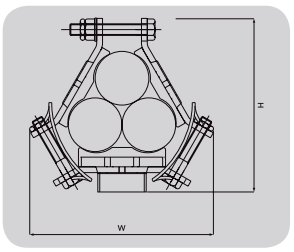

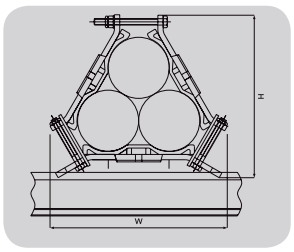

SELECTION TABLE FOR TREFOIL CABLE APPLICATION

Part No.	Cable Dia. Range mm	Dimensions mm													Weight g
		Two Bolt					Single Bolt				Framing Channel				
		W	H	D	P	Fixing Holes	W	H	D	Fixing Holes	W	H	D	Fixing Holes	
AR2-A31-	24-26	170	121	54	150	2 x M10	144	130	54	1 x M10	144	125	54	1 x M10	930
AR2-A32-	26-30	170	122	54	150	2 x M10	144	130	54	1 x M10	144	125	54	1 x M10	930
AR2-A33-	30-35	170	133	54	150	2 x M10	157	141	54	1 x M10	157	136	54	1 x M10	970
AR2-A34-	35-40	170	134	54	150	2 x M10	158	142	54	1 x M10	158	137	54	1 x M10	930
AR3-A35-	40-45	198	158	54	175	2 x M10	185	165	54	1 x M10	185	160	54	1 x M10	1200
AR3-A36-	45-50	198	160	54	175	2 x M10	187	167	54	1 x M10	187	162	54	1 x M10	1200
AR4-A37-	50-55	214	174	54	200	2 x M10	204	182	54	1 x M12	204	177	54	1 x M12	1300
AR4-A38-	55-60	214	179	54	200	2 x M10	210	187	54	1 x M12	210	182	54	1 x M12	1300
AR4-A39-	60-66	214	185	54	200	2 x M10	217	193	54	1 x M12	217	188	54	1 x M12	1300
AR5-A61-	66-71	250	225	54	225	2 x M10	254	225	54	1 x M12	254	220	54	1 x M12	1800
AR5-A62-	71-76	250	226	54	225	2 x M10	255	226	54	1 x M12	255	221	54	1 x M12	1800
AR5-A63-	76-82	250	230	54	225	2 x M10	260	230	54	1 x M12	260	225	54	1 x M12	1800
AR8-A64-	82-92	285	250	54	225	2 x M10	N/A				N/A				2100
AR8-A65-	92-102	285	250	54	225	2 x M10	N/A				N/A				1900

SELECTION TABLE FOR SINGLE CABLE APPLICATION

Part No.	Cable Dia. Range mm	Dimensions mm													Weight g
		Two Bolt					Single Bolt				Framing Channel				
		W	H	D	P	Fixing Holes	W	H	D	Fixing Holes	W	H	D	Fixing Holes	
AR2-A11-	38-41	170	128	54	150	2 x M10	144	136	54	1 x M10	144	131	54	1 x M10	950
AR2-A12-	41-47	170	129	54	150	2 x M10	144	136	54	1 x M10	144	131	54	1 x M10	930
AR2-A13-	47-55	170	140	54	150	2 x M10	157	147	54	1 x M10	157	142	54	1 x M10	940
AR2-A14-	55-63	170	141	54	150	2 x M10	158	148	54	1 x M10	158	143	54	1 x M10	930
AR3-A15-	63-70	198	164	54	175	2 x M10	185	172	54	1 x M10	185	167	54	1 x M10	1200
AR3-A16-	70-79	198	166	54	175	2 x M10	187	173	54	1 x M10	187	168	54	1 x M10	1200
AR4-A17-	79-87	214	180	54	200	2 x M10	204	188	54	1 x M12	204	183	54	1 x M12	1300
AR4-A18-	87-95	214	186	54	200	2 x M10	210	193	54	1 x M12	210	188	54	1 x M12	1300
AR4-A19-	95-104	214	192	54	200	2 x M10	217	199	54	1 x M12	217	197	54	1 x M12	1300
AR5-A51-	104-112	250	231	54	225	2 x M10	254	231	54	1 x M12	254	226	54	1 x M12	1700
AR5-A52-	112-120	250	232	54	225	2 x M10	255	232	54	1 x M12	255	227	54	1 x M12	1700
AR5-A53-	120-130	250	237	54	225	2 x M10	260	237	54	1 x M12	260	232	54	1 x M12	1700

To order please add fixing suffix:
Two Bolt - **TB** Single Bolt - **SB** Framing Channel - **FC**

FlexiStrap

Intermediate Short Circuit Strap
Patent Applied for:
GB1000963.7

Retain ultimate protection when your cleats are widely spaced.

Immensely strong intermediate straps that can be used on trefoil cables with our Vulcan + and Emperor cleats, for a more cost effective solution. Available in a standard or heavy duty form, the FlexiStrap is manufactured from Type 316L stainless steel, and can withstand the highest levels of short-circuit.

The unique registered design is easy to use and can be rapidly installed. In its standard form (SD), FlexiStrap would typically be paired with Vulcan + cleats and is installed by wrapping the strap twice around the cables. In its heavy duty form (HD), FlexiStrap would typically be paired with Emperor cleats and is installed by wrapping the strap three times around the cables. You will need to specify if you want SD or HD when you order.

FlexiStrap has been short-circuit tested in accordance with IEC 61914:2009. We can supply it with or without a Low Smoke and Fume Zero Halogen Polymeric liner. However, if it needs to comply with the standard, it must have this liner.

FlexiStrap can be installed with a standard ¼" or 6mm ratchet handle and a 10mm spanner.

We provide a proprietary drive socket along with the straps.

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STANDARD DUTY (SD)

Part No.	Trefoil Cable Formation		Weight g
	Min Dia. mm	Max Dia. mm	
FS24-34SD	24	34	131
FS30-41SD	30	41	144
FS37-47SD	37	47	155
FS43-54SD	43	54	168
FS50-60SD	50	60	180
FS56-67SD	56	67	193
FS63-73SD	63	73	204
FS69-80SD	69	80	217
FS72-85SD	72	85	226
FS82-95SD	82	95	245
FS92-105SD	92	105	264
FS102-115SD	102	115	282
FS112-125SD	112	125	301
FS122-135SD	122	135	319
FS132-145SD	132	145	338
FS-T001-4	Special Drive Socket		

HEAVY DUTY (HD)

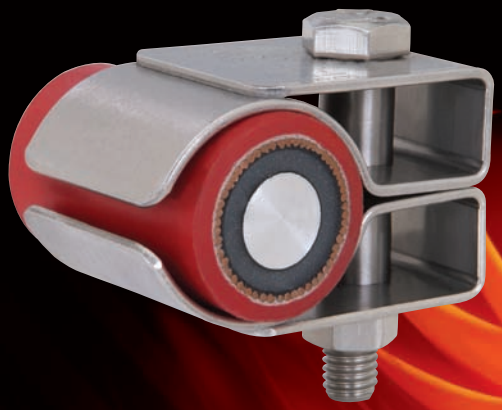
Part No.	Trefoil Cable Formation		Weight g
	Min Dia. mm	Max Dia. mm	
FS24-34HD	24	34	165
FS30-41HD	30	41	185
FS37-47HD	37	47	202
FS43-54HD	43	54	221
FS50-60HD	50	60	238
FS56-67HD	56	67	258
FS63-73HD	63	73	275
FS69-80HD	69	80	294
FS72-85HD	72	85	308
FS82-95HD	82	95	336
FS92-105HD	92	105	364
FS102-115HD	102	115	392
FS112-125HD	112	125	420
FS122-135HD	122	135	448
FS132-145HD	132	145	476
FS-T001-4	Special Drive Socket		

FlexiStrap is available with or without a Polymeric LSF liner. If a liner is required add suffix **L** to the part number.

Sample Part number - Trefoil Strap 24 to 34mm Standard Duty with liner FS24-34SDL.
All Straps are 50mm wide.
FlexiStrap can also be used to contain bundles of cable.
Please contact our sales office with details of your particular requirement.

Phoenix®

Max S/C Test Level	Cleat Spacing
60kA	600mm



Fire Rated Cable Clamps
Community Design Reg No.
000355854-0002

When you need cable clamps that are fireproof, corrosion resistant and easy to fit.

The Phoenix range is specifically designed for the installation of Fire Protection (FP) rated cables. Precision engineered from Type 316L stainless steel with single bolt fixing, Phoenix Cable Clamps are available in 11 sizes to suit single cables from 10mm to 65mm in diameter.

To prove their fire resistance these cleats were used to secure a fire rated cable during a series of tests in accordance with BS 5839-1:2002, Section 26.2d. The cleats successfully supported the cable during the test and the performance was as expected given the physical characteristics of 316L stainless steel at elevated temperatures. We would be happy to supply you with a copy of the test report and data sheet.

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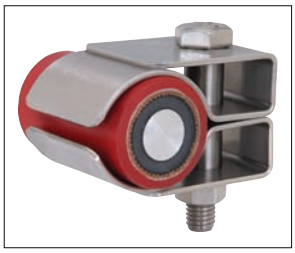
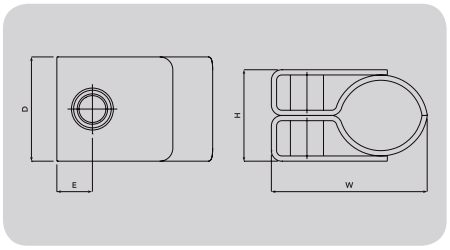
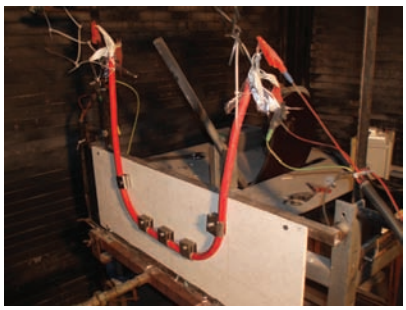




Part No.	Cable Range Dia. mm	Dimensions mm				Fixing Holes	Weight g
		W	H	D	E		
1FP-10SS	10-13	40	21	40	13.7	1 x M10	91
1FP-11SS	13-16	44	24	40	13.7	1 x M10	106
1FP-12SS	16-19	47	27	40	13.7	1 x M10	113
1FP-13SS	19-23	51	31	40	13.7	1 x M10	125
1FP-14SS	23-27	55	35	40	13.7	1 x M10	139
1FP-15SS	27-32	60	40	40	13.7	1 x M10	153
1FP-16SS	32-38	66	46	40	13.7	1 x M10	174
1FP-17SS	38-46	74	54	40	13.7	1 x M10	201
1FP-18SS	46-51	80	59	40	13.7	1 x M10	225
1FP-19SS	51-57	85	64	40	13.7	1 x M10	242
1FP-20SS	57-65	93	73	40	13.7	1 x M10	265



London Underground

Phoenix Cable Clamps are compliant with the requirement of London Underground Standard 1-085. Product Register No. 1661.

Centaur®

Max S/C Test Level	Cleat Spacing
64kA RMS 1sec	8.4m
163 kA Peak	

Cable Saddle

When you need a short-circuit tested product to secure large diameter insulated HV cables, used in Power Transmission Systems – typically 275kV to 400kV.

Centaur® cable saddles are designed to support cables with diameters from 100mm to 162mm, from support steelwork at centres of up to 8.4m.

Centaur consists of an extruded and pressed aluminium saddle and a hinged aluminium overstrap. The curvature of the saddle accommodates the thermal expansion of the cable and the ends of the saddle are flared so that the cable never comes into contact with a sharp edge under any circumstances. The overstrap incorporates a Low Smoke Zero Halogen Polymeric liner, which cushions the cable in the event of a short-circuit. All the fixing bolts are in Type 316L stainless steel. To eliminate the possibility of galvanic corrosion all dissimilar metals are isolated from each other by injection moulded separation washers. Centaur saddles are available in lengths of 400, 600 and 800mm to allow for different cable diameters and mounting centres. Centaur can be supplied with a variety of rigid or flexible mounting arrangements.

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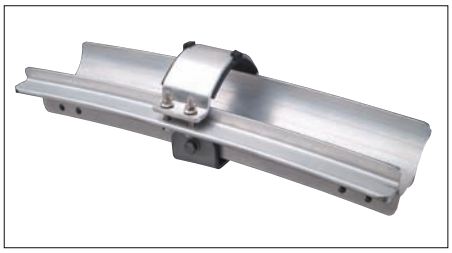

UK Patent App. No. 0805128.6, European Patent App. No. 08250959.7,
US Patent App. No. 12/052,614, Community Design Registration No. 000749999

Part No.	Cable Range Dia. mm	Length of Cable Saddle
CS100-112/400	100-112	400mm 
CS108-122/400	108-122	
CS120-132/400	120-132	
CS128-142/400	128-142	
CS140-152/400	140-152	
CS148-162/400	148-162	
CS100-112/600	100-112	600mm 
CS108-122/600	108-122	
CS120-132/600	120-132	
CS128-142/600	128-142	
CS140-152/600	140-152	
CS148-162/600	148-162	
CS100-112/800	100-112	800mm 
CS108-122/800	108-122	
CS120-132/800	120-132	
CS128-142/800	128-142	
CS140-152/800	140-152	
CS148-162/800	148-162	

c UL US LISTED
CS148-162/400 4CG8

c UL US LISTED
CS148-162/800 4CG8

Matrix

The Matrix cable cleat provides a space saving solution to the problems of cleating multiple cable runs to cable ladder or steel frameworks. The cleat is made to order as a special to suit particular applications and any number of rows and columns can be accommodated.

The steel frameworks can be supplied in hot dipped galvanised steel or Type 316L stainless steel. The plastic cable support pads are produced in low smoke and fume Zero Halogen Polymeric material.

Please contact us for further details.

ProTect

Max S/C Test Level	Cleat/Strap Spacing
136kA	300mm

Retention Strap
UK Design Reg No.
355854

ProTect cable straps are available for trefoil cable applications, when you need to withstand the highest levels of short-circuit.

The unique registered design means they can be quickly installed. The frame, manufactured from Type 316L stainless steel, offers the ultimate protection against the harshest environmental conditions. The frame is tightened and locked using a combination of an M10 set screw and flanged nut in A4 stainless steel, and a screw head retainer in Low Smoke and Fume (LSF) Zero Halogen Nylon.

They are available with or without an integral LSF Polymeric liner. Please contact us for further details.

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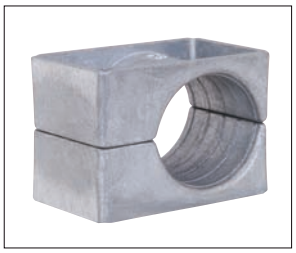
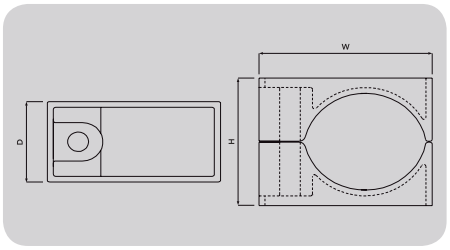
One & Two Hole Cableclamps - Aluminium

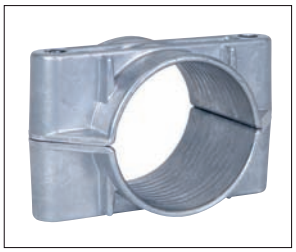
Manufactured as standard in plain LM6 aluminium to BS 1490. Used to fix power cables in dry industrial or outdoor unpolluted applications, the product can be epoxy coated for use in harsh environments, such as sea air conditions.

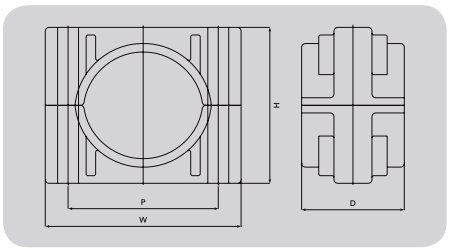




ONE HOLE CABLECLAMP

Part No.	Cable Range		Dimensions mm			Fixing Holes	Pack Qty	Item Weight g
	Min Dia. mm	Max Dia. mm	W	H	D			
1G-11N	13	16	44	34	43	1 x M10	50	80
1G-12N	16	19	48	36	43	1 x M10	50	91
1G-13N	19	22	50	38	43	1 x M10	50	98
1G-14N	22	26	53	40	43	1 x M10	50	100
1G-15N	26	33	59	44	43	1 x M10	25	120
1G-16N	33	39	65	50	43	1 x M10	25	132
1G-17N	39	45	71	56	43	1 x M10	25	152
1G-18N	45	51	78	63	43	1 x M10	25	168
1G-19N	51	58	84	73	43	1 x M10	10	202
1G-20N	58	65	91	80	43	1 x M10	10	189
1G-21N	65	71	97	89	43	1 x M10	10	253





TWO HOLE CABLECLAMP

Part No.	Cable Range		Dimensions mm				Fixing Holes	Pack Qty	Item Weight g
	Min Dia. mm	Max Dia. mm	W	H	D	P			
2A-07N	38	46	94	48	49	68	2 x M10	25	174
2A-08N	46	51	104	54	49	79	2 x M10	25	214
2A-09N	51	57	105	61	49	79	2 x M10	25	224
2A-10N	57	64	105	68	49	79	2 x M10	25	234
2A-11N	64	70	133	74	64	106	2 x M10	10	360
2A-1200N	70	76	133	80	64	106	2 x M10	10	376
2A-1201N	76	83	133	87	64	106	2 x M10	10	388
2A-1202N	83	90	133	94	64	106	2 x M10	5	392
2A-131N	90	97	154	101	76	126	2 x M10	5	520
2A-132N	97	105	154	109	76	126	2 x M10	5	524
2A-141N	105	112	165	118	76	135	2 x M10	5	590
2A-142N	112	120	173	124	76	143	2 x M10	5	642

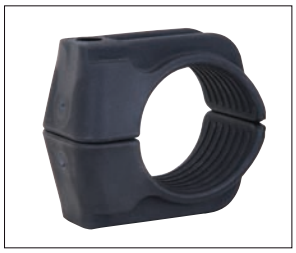
Specials: For cable diameters above 120mm please contact our sales office.

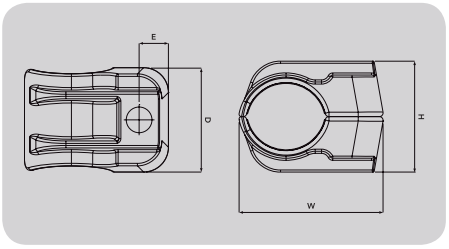
One & Two Hole Cableclamps - Non Metallic

UK Design Reg. No: 355854

Manufactured as standard in Black Polypropylene (B) or Black Flame Retardant V0 Zero Halogen Phosphorus Free Nylon (LSF) or to special order in a London Underground Approved Material (LUL).

Used to fix power cables in indoor and outdoor applications.



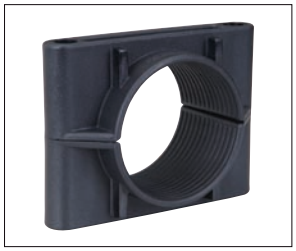


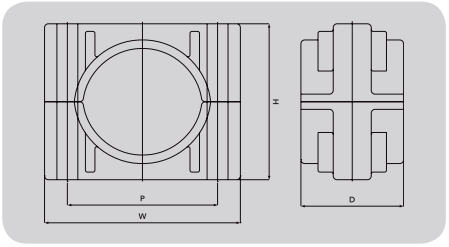
ONE HOLE CABLECLAMP

Part No.	Material Suffix	Cable Dia Range mm	Dimensions mm				Fixing Holes	Pack Qty	Weight g		
			W	H	D	E			B	LSF	LUL
1F-10	B/LSF/LUL	10-13	37.8	27.0	41.4	10.2	1 x M10	100	14.6	19.6	23.8
1F-11	B/LSF/LUL	13-16	41.2	30.0	41.4	10.4	1 x M10	100	17.0	23.0	27.7
1F-12	B/LSF/LUL	16-19	44.3	33.0	41.4	10.7	1 x M10	100	19.6	26.4	32.0
1F-13	B/LSF/LUL	19-23	48.2	36.0	41.4	10.9	1 x M10	100	22.4	30.2	36.5
1F-14	B/LSF/LUL	23-27	52.2	40.0	41.4	11.3	1 x M10	100	25.8	34.6	42.0
1F-15	B/LSF/LUL	27-32	57.1	44.0	41.4	11.6	1 x M10	100	29.2	39.0	47.6
1F-16	B/LSF/LUL	32-38	63.1	49.0	41.4	12.1	1 x M10	100	34.2	46.2	55.7
1F-17	B/LSF/LUL	38-46	71.3	58.0	41.4	12.9	1 x M10	50	47.8	64.0	77.9
1F-18	B/LSF/LUL	46-51	77.3	67.0	41.4	13.5	1 x M10	50	54.0	73.2	88.0
1F-19	B/LSF/LUL	51-57	83.2	72.0	41.4	13.9	1 x M10	50	59.0	80.4	96.2

London Underground

The LUL version of the 1F One Hole Cableclamps are compliant with the requirement of London Underground Standard 1-085. Product Register No. 363.





Max S/C Test Level (Multi-core Cable)	Cleat Spacing
76kA	600mm

TWO HOLE CABLECLAMP

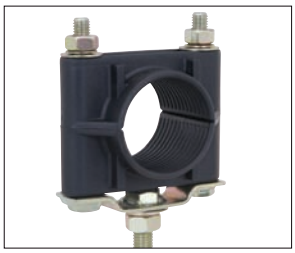
Part No.	Material Suffix	Cable Dia Range mm	Dimensions mm				Fixing Holes	Pack Qty	Weight g		
			W	H	D	P			B	LSF	LUL
2F-07	B/LSF/LUL	38-46	92	60	54	68	2 x M10	25	73.0	91.0	119.0
2F-08	B/LSF/LUL	46-51	103	71	54	79	2 x M10	25	80.9	109.9	132.0
2F-09	B/LSF/LUL	51-57	103	76	54	79	2 x M10	25	95.0	119.0	155.0
2F-10	B/LSF/LUL	57-64	103	82	54	79	2 x M10	25	89.1	122.5	156.5
2F-11	B/LSF/LUL	64-70	130	89	54	106	2 x M10	15	116.0	157.3	189.0
2F-1200	B/LSF/LUL	70-76	130	95	54	106	2 x M10	15	124.0	167.3	202.0
2F-1201	B/LSF/LUL	76-83	130	100	54	106	2 x M10	10	126.0	170.0	205.0
2F-1202	B/LSF/LUL	83-90	130	108	54	106	2 x M10	10	128.0	172.0	208.0
2F-131	B/LSF/LUL	90-97	150	115	54	126	2 x M10	5	152.0	208.0	248.0
2F-132	B/LSF/LUL	97-105	150	122	54	126	2 x M10	5	156.0	208.0	254.0
2F-141	B/LSF/LUL	105-112	161	130	54	135	2 x M10	5	179.5	238.8	292.2
2F-142	B/LSF/LUL	112-120	169	138	54	143	2 x M10	5	193.5	261.0	315.4
2F-151	B/LSF/LUL	120-128	177	148	54	151	2 x M10	5	212.2	280.0	346.0
2F-152	B/LSF/LUL	128-135	185	158	54	158	2 x M10	5	228.5	304.4	372.4

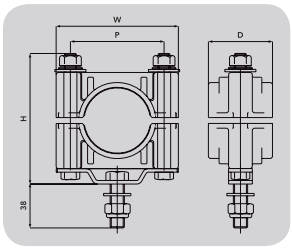
Please note:
These cable clamps now replace our previous 1H & 2H versions, however the H range can still be supplied on special request to complete ongoing contracts.

London Underground

The LUL version of the 2F One Hole Cableclamps are compliant with the requirement of London Underground Standard 1-085. Product Register No. 364.

Heavy Duty Single Bolt Fixing Cableclamp





Manufactured as standard in Black Polypropylene (B) or Black Flame Retardant V0 Zero Halogen Phosphorus Free Nylon (LSF). Supplied together with a Zinc passivated mild steel support bracket that enables larger cables to be fixed with one inclusive single 12mm bolt.

Used to fix power cables in indoor and outdoor applications.

Part No.	Material Suffix	Support Bracket Material	Cable Dia Range mm	Dimensions mm				Weight g	
				W	H	D	E	B	LSF
2FAS-08	B or LSF	Y	46-51	103.0	110.0	54.0	38.0	353.9	382.9
2FAS-09	B or LSF	Y	51-57	103.0	110.0	54.0	38.0	368.0	392.0
2FAS-10	B or LSF	Y	57-64	103.0	110.0	54.0	38.0	362.1	395.5
2FAS-11	B or LSF	Y	64-70	130.0	143.0	54.0	38.0	433.0	474.3
2FAS-1200	B or LSF	Y	70-76	130.0	143.0	54.0	38.0	441.0	484.3
2FAS-1201	B or LSF	Y	76-83	130.0	143.0	54.0	38.0	443.0	487.0
2FAS-1202	B or LSF	Y	83-90	130.0	143.0	54.0	38.0	445.0	489.0

Triplex Cable Surround

Max S/C Test Level (within 2F Clamps)	Cleat Spacing
76kA	600mm

Tested in line with EN 50368:2003

Patent No.
UK Patent GB 238 9970

Manufactured as standard in a LSF Zero Halogen Polymeric material. Used within a single cable cleat to secure triplex cable (three single core cables which are spirally twisted together), it overcomes the twist in the cable so allowing the cable to be cleated at any point along its length.

Part No.	Triplex Cable Range		Depth mm	Weight g
	Min Dia. mm	Max Dia. mm		
SFT31	28	34	62	87.0
SFT36	33	39	62	113.4
SFT43	39	47	62	140.0
SFT51	47	55	62	212.3

Basket Tray Clip

Patent No. 0916085.4

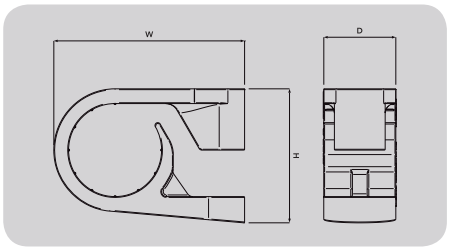
Manufactured in 316L stainless steel. Used as a very strong method of securing cable cleats to Basket Tray.

This clip has been used in successful short circuit tests with Emperor Trefoil Cleats and Vulcan Trefoil Cleats.

Max S/C Test Level (with Emperor Cleats)	Cleat Spacing
136kA	600mm

Part No.	Dimensions mm			Fixing Holes	Weight g
	W	H	D		
91-BTC01	37	13	35	1 x M10	30g

Industrial Cableclamp



Manufactured as standard in Black LLDPE (B) or in a London Underground Approved Material (LUL).

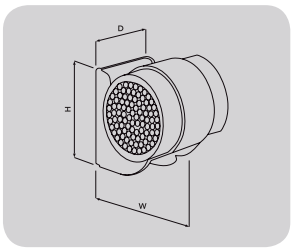
Used to fix power cables in indoor and outdoor applications.

Part No.		Cable Range		Dimensions mm			Fixing Holes	Pack Qty	SWL kgf	Weight g	
LLDPE	LUL	Min Dia. mm	Max Dia. mm	W	H	D				LLDPE	LUL
17-01B	17-01LUL	10	15	27.8	17.6	12	1 x M4	100	18	2.0	3.5
17-02B	17-02LUL	12	17	32.0	20.8	14	1 x M4	100	24	3.3	5.4
17-03B	17-03LUL	15	20	37.1	25.3	16	1 x M4	100	32	5.2	8.6
17-04B	17-04LUL	18	24	41.0	29.6	18	1 x M4	100	39	7.3	12.2
17-05B	17-05LUL	22	29	52.1	35.4	20	1 x M6	50	52	11.2	18.6
17-06B	17-06LUL	26	34	58.2	40.9	22	1 x M6	50	66	16.5	27.9
17-07B	17-07LUL	32	42	69.3	49.2	25	1 x M6	25	79	25.6	42.9
17-08B	17-08LUL	39	51	81.7	58.5	26	1 x M6	25	93	36.2	60.1

London Underground

The LUL version of this clamp is compliant with the requirement of London Underground Standard 1-085. Product Register No. 365.

Elite Range-Taker Cableclamp



Tested in line with EN 50368:2003

Manufactured as standard in Black Polypropylene (B) , White Polypropylene (W) or Black Flame Retardant V0 Zero Halogen Phosphorus Free Nylon (LSF). The clamp incorporates a fully releasable strap allowing ease of re-installation.

Used to fix power cables in indoor and outdoor applications.

Part No.	Material Suffix	Cable Range		Dimensions mm			Fixing Holes	Pack Qty	Weight g	
		Min Dia. mm	Max Dia. mm	W	H	D			B/W	LSF
15-1	B,W or LSF	9.5	16.0	27.0	37.0	25.0	1 x M6	100	6.0	8.0
15-2	B,W or LSF	15.0	25.0	36.0	37.0	32.0	1 x M6	50	8.0	10.9
15-3	B,W or LSF	23.0	37.0	48.0	48.0	36.0	1 x M6	50	15.0	18.1
15-4	B,W or LSF	34.0	52.0	63.0	65.0	40.0	1 x M6	25	20.0	25.5

Earthing Strip Clip

Manufactured as standard in Black Polypropylene (B) or Grey Flame Retardant Polypropylene (FR).

Used to fix PVC coated, bare copper or aluminium strip.

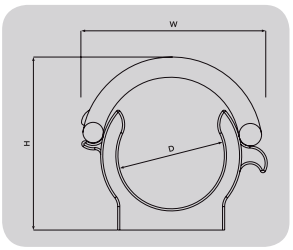
METRIC SIZES

Part No.	Material Suffix	Strip Size mm	Hold Off mm	Length mm	Fixing Holes (slotted) mm	Pack Qty	Weight g
70-04	B or FR	20 x 4	17	55	11 x 8	100	15
70-06	B or FR	20 x 6	16	55	11 x 8	100	16
70-07	B or FR	25 x 6	16	55	11 x 8	100	14
70-08	B or FR	50 x 4	18	87	11 x 8	100	28
70-09	B or FR	40 x 6	16	87	11 x 8	100	28
70-10	B or FR	50 x 6	15	87	11 x 8	100	26
70-11	B or FR	40 x 4	18	87	11 x 8	100	28
70-12	B or FR	50 x 10	11	87	11 x 8	100	24
70-14	B or FR	60 x 6	18	97	11 x 8	100	31
70-16	B or FR	80 x 6	19	118	11 x 8	50	15

IMPERIAL SIZES

Part No.	Material Suffix	Strip Size inches	Hold Off inches	Length inches	Fixing Holes (slotted) inches	Pack Qty	Weight g
60-04	B or FR	1 x ⅛	5/16	2	7/16 x 5/16	100	12
60-05	B or FR	1 ¼ x ⅛	⅜	2 5/8	7/16 x 5/16	100	21
60-06	B or FR	1 ¼ x 3/16	5/16	2 5/8	7/16 x 5/16	100	20
60-08	B or FR	1 ½ x 3/16	5/16	2 5/8	7/16 x 5/16	100	20
60-10	B or FR	1 ½ x ⅛	⅜	2 5/8	7/16 x 5/16	100	20
60-15	B or FR	2 x ⅛	¼	3 ⅛	7/16 x 5/16	100	24
60-26	B or FR	1 x ⅛	¾	2 ⅛	7/16 x 5/16	100	16
60-27	B or FR	1 x 3/16	⅝	2 ⅛	7/16 x 5/16	100	16
60-28	B or FR	1 ½ x 3/16	⅝	2 ⅞	7/16 x 5/16	100	25
60-32	B or FR	1 ¼ x ¼	⅝	3	7/16 x 5/16	100	25
60-34	B or FR	1 ½ x ⅛	¾	3	7/16 x 5/16	100	25
60-36	B or FR	1 ½ x ¼	⅝	3	7/16 x 5/16	100	24
60-37	B or FR	1 ½ x ⅜	⅜	2 ⅞	7/16 x 5/16	100	23
60-38	B or FR	1 ¾ x ⅛	¾	3 ⅜	7/16 x 5/16	100	27
60-39	B or FR	1 ¾ x ¼	⅝	3 ⅜	7/16 x 5/16	100	27
60-40	B or FR	2 x ⅛	¾	3 ⅜	7/16 x 5/16	100	30
60-42	B or FR	2 x ¼	⅝	3 ⅜	7/16 x 5/16	100	25
60-44	B or FR	2 x ⅜	⅜	3 ⅜	7/16 x 5/16	100	24

Cable Conduit Clip

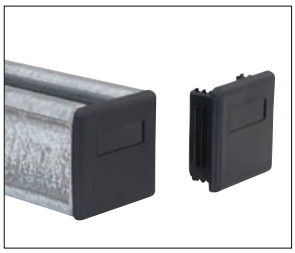


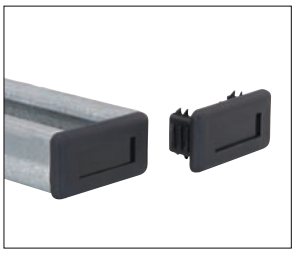
Manufactured as standard in Black or White Nylon, this surface mounted Conduit Clip comes complete with a captive hinged over-strap.

Used to fix conduit in indoor or outdoor applications.

Part No.	Material Suffix	D mm	H mm	W mm	Fixing Holes mm	Stand off	Pack Qty	Weight g
CC20B	B or W	20	35	35	4	5	100	8.8
CC25B	B or W	25	40	40	4	5	100	10.6

Framing Channel Accessories





Framing Channel End Caps

Manufactured as standard in Black or White Polypropylene (PP), Black or White LDPE (PE) or Nylon (LSF).

The EC version is a spring fit whilst the 'Gripper' version has fins which bend and deform into the channel.

There is provision to incorporate the customer's company logo.

Also available to order in other colours.

Part No.	Description	Size mm	Material Suffix	Colour	Pack Qty	Weight g
91-ECLB	'EC' type channel end cap	41 x 41	PP	Black	100	7.3
91-ECLW	'EC' type channel end cap	41 x 41	PP	White	100	7.3
91-ECSB	'EC' type channel end cap	41 x 21	PP	Black	100	3.2
91-ECSW	'EC' type channel end cap	41 x 21	PP	White	100	3.2
91-JGLB	'Gripper' type channel end cap	41 x 41	PE	Black	100	9.4
91-JGLW	'Gripper' type channel end cap	41 x 41	PE	White	100	9.4
91-JGSB	'Gripper' type channel end cap	41 x 21	PE	Black	100	4.4
91-JGSW	'Gripper' type channel end cap	41 x 21	PE	White	100	4.4
91-JGLLSF	'Gripper' type channel end cap	41 x 41	LSF	Black	100	9.4
91-JGSLSF	'Gripper' type channel end cap	41 x 21	LSF	Black	100	4.4

Butterfly Clip

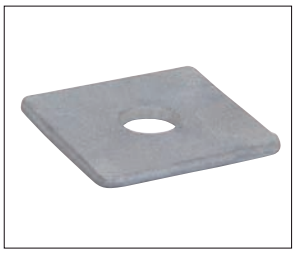
Manufactured as standard in Black Nylon 66 (NY), the butterfly clip snaps into 41mm wide framing channel. It will accommodate a cable tie of up to 10mm in width (not included). Used to allow cables to be strapped at right angles to the channel.

Part No.	Material Suffix	Pack Qty	Weight g
91-BC	NY	100	3.8

Thermal Spacer

Manufactured as standard in Black Polypropylene (PP). A slotted hole is also provided for running heat detection cable. Used to ensure separation of the cable on cable ladder, framing channel and ladder rungs with reduced return flanges.

Part No.	Height Above Ladder Rung	Material Suffix	Pack Qty	Weight g
91-TSL1	75mm	PP	100	19.5
91-TS7.5	50mm	PP	100	14.7



Framing Channel Washer

Manufactured as standard in the materials shown this washer is recommended for use when our range of 2H clamps are fitted to framing channel.

Part No.	Size	Material Suffix	Hole Size mm	Pack Qty	Weight g
91-WZ	40 x 40	Mild Steel Zinc Plated	10	100	33
91-WZ-X	40 x 40	Mild Steel Zinc Plated	12	100	33
91-W-2	40 x 40	A2 Stainless Steel	10	100	34
91-W-4	40 x 40	A4 Stainless Steel	12	100	34
91-WG	40 x 40	Mild Steel Galvanised	10	100	37

Trunking Adaptor

Manufactured as standard in Black Polypropylene (B) or Nylon (LSF), this adaptor can be used to fit one hole and two hole cable clamps when cables are being installed parallel to the trunking.

Part No.	Material Suffix	Pack Qty	Weight g
91-TA	B	100	5.3
91-TA	LSF	100	7.1

Insulation Plate

Manufactured as standard in Black Polypropylene, this insulation plate can be used to provide a barrier where galvanic reaction may occur between dissimilar metals, e.g. when installing stainless steel cleats onto galvanised steel channel.

Part No.	Material Suffix	Pack Qty	Weight g
91-IP	B	100	5

Channel nuts

Manufactured as standard in Bright Zinc Plated Mild Steel.

Part No.	Material Suffix	Pack Qty	Weight g
0F-M10-CN00-Z	M10 Channel Nut (long spring)	100	38
0F-M10-CN01-Z	M10 Channel Nut (short spring)	100	37
0F-M10-CN02-Z	M10 Channel Nut (no spring)	100	36

Specialist Cable Fixings for Utilities

Single Way Fixing Cable Cleat

Manufactured as standard in Black Acetal (A), Black Polypropylene (B) & Grey Flame Retardant Polypropylene (FR).

A robust cleat used for securing armoured power cables.

Part No.	Material Suffix	Cable Dia. mm	Fixing Holes mm	Pack Qty	Weight g
10-034	B or FR	9.0	3	200	0.8
10-042	B or FR	10.6	4	200	1.9
10-046	B or FR	11.7	4	200	2.8
10-053	B or FR	13.5	4	200	2.8
10-056	B or FR	14.2	4	200	3.1
10-061	B or FR	15.5	4	200	3.1
10-065	B or FR	16.5	4	200	4.8
10-072	B or FR	18.2	4	200	4.2
10-083	B or FR	21.1	6	100	7.7
10-098	B or FR	24.8	4 x 6	100	6.4
10-106	B or FR	27.0	6	100	7.5
10-120	A	31.0	6	50	15.8
10-138	A	35.0	6	50	23.0

Two Way Single Fixing Cable Cleat

Manufactured as standard in Black Polypropylene (B) & Grey Flame Retardant Polypropylene (FR). A robust cleat used for securing two armoured power cables on flat surfaces.

Part No.	Material Suffix	Cable Dia. mm	Fixing Holes mm	Pack Qty	Weight g
2W37	B	9.4	4	100	2.2
2W42	B or FR	10.6	4	100	3.3
2W46	B or FR	11.7	4	100	3.6
2W53	B or FR	13.5	4	100	4.0
2W56	B or FR	14.2	4	100	5.0

Three & Four Way Double Fixing Cable Cleat

Manufactured as standard in Black Polypropylene (B) & Grey Flame Retardant Polypropylene (FR). A robust cleat used for securing three or four armoured power cables on flat surfaces.

Part No.	Material Suffix	Cable Dia. mm	Fixing Holes mm	Pack Qty	Weight g
3W46	B or FR	11.7	4	200	8.7
3W56	B or FR	14.2	4	200	9.3
4W10	B	4 x 15	4	100	9.5

Single Way Heavy Duty Radiused Pole Cleat

Manufactured as standard in Black Polypropylene (B). A curved robust cleat used for securing power cables on 200mm diameter wooden electricity supply poles.

Part No.	Material Suffix	Cable Dia. mm	Fixing Holes mm	Pack Qty	Weight g
35-04	B	27.6	8	100	13.0
35-06	B	31.2	8	100	12.0
35-065	B	33.5	8	100	18.5
35-07	B	36.0	8	100	14.0
35-08	B	37.8	8	100	16.0
35-10	B	41.5	8	100	26.0
35-12	B	44.6	8	100	25.0
35-22	B	49.2	8	100	23.0
35-26	B	53.5	8	50	25.0
35-30	B	56.6	8	50	27.0
35-34	B	61.6	11	50	53.0
35-42	B	72.5	11	25	84.0

Two Way Heavy Duty Radiused Pole Cleat

Manufactured as standard in Black Polypropylene (B). A curved robust cleat used for securing two power cables on 200mm diameter wooden electricity supply poles.

Part No.	Material Suffix	Cable Dia. mm	Fixing Holes mm	Pack Qty	Weight g
2WP04	B	11.7	4	100	6.1
2WP06	B	13.2	4	100	5.4
2WP10	B	16.5	4	100	6.5
2WP15	B	19.1	8	100	7.3

Three Way Heavy Duty Radiused Pole Cleat

Manufactured as standard in Black Polypropylene (B). A curved robust cleat used for securing three power cables on 200mm diameter wooden electricity supply poles.

Part No.	Material Suffix	Cable Dia. mm	Fixing Holes mm	Pack Qty	Weight g
3WP04	B	11.7	6.35	200	8.0
3WP06	B	13.2	6.35	200	8.2
3WP10	B	16.5	6.35	200	9.8
3WP15	B	19.2	6.35	200	12.5
3WP20	B	21.7	6.35	200	13.7
3WP2	B	15.0	6.35	200	10.7
3WN05	B	24.0	6.35	200	11.9

Single Way Snap on Saddle Clip

Manufactured as standard in Black Polypropylene (B) & Grey Flame Retardant Polypropylene (FR). Used for mounting cables and pipes on flat surfaces also providing clearance between the cable or pipe and the mounting surface.

Part No.	Material Suffix	Cable Dia. mm	Fixing Holes mm	Pack Qty	Weight g
90-M095	B or FR	7.5	3.75	500	1.8
90-M120	B or FR	12.0	3.75	500	2.4
90-01	B or FR	12.7	3.75	500	2.2
90-02	B or FR	15.0	3.75	500	2.4
90-03	B or FR	17.5	4.0	500	3.3
90-075	B or FR	19.0	4.0	500	3.6
90-04	B or FR	23.0	4.0	500	3.2
90-04.1	B or FR	24.2	4.0	500	3.1
90-05	B or FR	25.4	4.0	500	4.3
90-06	B or FR	27.5	5.0	500	5.3
90-07	B or FR	31.7	5.0	200	6.8
90-08	B or FR	34.0	5.0	200	6.7
90-09	B or FR	38.1	5.0	100	6.8
90-10	B or FR	42.0	5.0	200	8.7
90-11	B or FR	42.6	5.0	200	9.5
90-12	B or FR	44.4	5.0	100	7.4
90-13	B or FR	48.7	5.0	200	10.4
90-14	B or FR	53.9	5.0	100	14.4
90-143	B or FR	55.0	6.0	100	26.3
90-15	B or FR	60.5	6.0	100	25.8
90-19	B or FR	75.0	7.5	50	40.8
90-24++	B	88.9	10.0	25	70.7
90-S	B	SaddleClipSpacer*			1.2

++ This item is supplied with a base plate.
* Spacer suitable for use with all saddle clips (except part no 90-24). Provides additional separation of the cable or pipe from the mounting surface of approximately 12.5mm.

Two Way Cleat and Spacer

Manufactured as standard in Black Polypropylene (B) & Grey Flame Retardant Polypropylene (FR). Used for mounting power cables to poles and flat surfaces. A spacer is available to facilitate the stacking of the cleat.

Part No.	Material Suffix	Cable Dia. mm	Fixing Holes mm	Pack Qty	Weight g
E272	B or FR	11.1-19.1	10.0	50 pairs	22.7
E272S	B or FR	11.1-19.1	10.0	50	15.1
E273	B or FR	6.35-12.0	6.63	50 pairs	11.4
E273S	B or FR	6.35-12.0	6.63	50	7.2

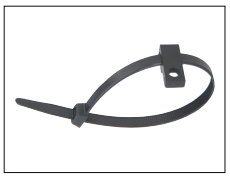
S = Spacer

ABC Wall Cleat

Manufactured as standard in Black Polypropylene (B). Used as a simple solution to the fixing of vertical and horizontal aerial bundled cable to walls and other surfaces. (Tested to ESI standards 43-14.)

Part No.	Material Suffix	A mm	H mm	D mm	Fixing Holes mm	Pack Qty	Weight g
115-010	B	10	47	31	6	100	12
115-050	B	50	59	37	6	100	27
115-100	B	100	72	43	6	25	54
115-125	B	125	80	48	6	25	74

Please note:
These clamps are available in 4 stand off variants denoted by 'A'.



Cable Tie Base

Manufactured in Nylon (NY). Used to accommodate a cable tie of up to 10mm in width (not included).

Part No.	Material Suffix	Fixing Holes mm	Pack Qty	Weight g
115-001	NY	6	100	2.5

Universal Cleat

Manufactured as standard in Black Polypropylene (B). Used for stacking cables vertically or horizontally using a frame work system. More detail can be supplied on request.

Part No.	Material Suffix	Cable Dia. mm	Pack Qty	Weight g
30U-1	B	23.8-38.1	50 pairs	89

Jointers' Tools

Complies with the Dielectric testing of IEC 60900-1:2004.

Cable Core Twisters

Manufactured in Acetal (International Orange). Used to manipulate bare or insulated cable cores and to align the cores prior to jointing.

3 CORE

Part No.	Cores	Core Range Size mm²	Pack Qty	Weight g
110-95C	3	70 Bare x 95 Bare	10	54
110-X01C	3	95 Bare x 95 Ins	10	51
110-120C	3	70 Bare x 120 Bare	10	51
110-120IC	3	70 Ins x 120 Ins	10	49
110-X06C	3	120 Bare x 120 Ins	10	48
110-X07C	3	185 Bare x 185 Ins	10	148
110-240C	3	185 Bare x 240 Bare	10	146
110-300C	3	185 Bare x 300 Bare	10	147
110-300IC	3	185 Ins x 300 Ins	10	139
110-X08C	3	300 Bare x 300 Ins	10	138
110-X09C	3	70 Bare x 70 Ins	10	53
110-X10C	3	95 Bare x 185 Bare	10	154
110-X11C	3	95 Ins x 185 Ins	10	149

4 CORE

Part No.	Cores	Core Range Size mm²	Pack Qty	Weight g
110-41C	4	95 Bare x 95 Ins	10	51
110-42C	4	185 Ins x 240 Ins	10	142
110-43C	4	185 Bare x 240 Bare	10	150
110-44C	4	185 Ins x 300 Ins	10	141
110-48C	4	120 Ins x 185 Ins	10	150
110-X02C	4	185 Bare x 300 Bare	10	146
110-X14C	4	95 Bare x 185 Bare	10	155
110-X15C	4	95 Ins x 185 Ins	10	149
110-16C	4	95 Ins stranded x 95 Ins solid	10	51
110-17C	4	300 Ins stranded x 300 Ins solid	10	140

3 & 4 CORE

Part No.	Cores	Core Range Size mm²	Pack Qty	Weight g
110-X03C	3 & 4	3C 95 Ins x 4C 95 Ins	10	50
110-X04C	3 & 4	3C 185 Ins x 4C 185 Ins	10	145
110-X05C	3 & 4	3C 300 Ins x 4C 240 Ins	10	135
110-X12C	3 & 4	3C 300 Bare x 4C 300 Bare	10	141
110-X13C	3 & 4	3C 300 Ins x 4C 300 Ins	10	134

Cable Core Former

Manufactured in Nylon. Used to hold the cores of a three core cable apart whilst a joint is being made. The central hole provides a facility for positioning a mastic bung.

Part No.	Core Separation Distance mm	Pack Qty	Weight g
120-F	32 - 58	10	44.1

Cable Core Guard

Manufactured in Nylon (International orange). Used to provide separation between a cable core which is being cut and neighbouring cores.

Part No.	Nominal Lift mm	Pack Qty	Weight g
120-CG1C	23	10	57

Cable Core Wedge

Manufactured in Nylon (International orange). Used to prise apart and to separate the cores of cables.

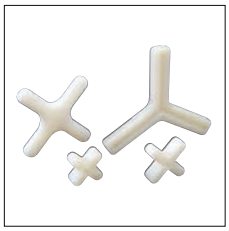
Part No.	Length mm	Width mm	Nominal Lift mm	Pack Qty	Weight g
110-1NYC	150	25	15	10	41
110-2NYC	225	25	25	10	65
110-3NYC	225	25	38	10	89
110-4NYC	150	13	25	10	32

Complies with the Dielectric testing of IEC 60900-1:2004.

Cable Core Stripper

Manufactured in a polymeric material. Used to remove insulation and sheathing from live armoured power cables. The tool has an exceptionally strong tough blade and a unique handle moulded in a softer plastic which provides a cushion effect when a hammer is used to initiate a cut in the cable sheath.

Part No.	Nominal Lift mm	Pack Qty	Weight g
120-CS	90	10	183

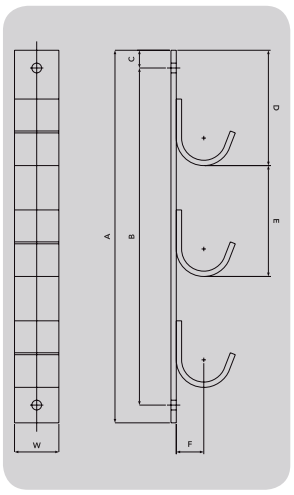


Cable Core Spreader

Manufactured in Nylon. Used to hold apart the cores of a cable when jointing cables.

Part No.	Core	Core Range Size mm²	Pack Qty	Weight g
120-VNY	3	240 - 300	100	45
120-WNY	3	185	100	38
120-YNY	3	95 - 150	100	30
120-ZNY	3	95	100	24
120-UNY	4	Universal	100	37
120-15	4	Universal	100	10
120-20	4	Universal	100	12

Cable Hangers



Manufactured in Mild Steel. Hot dipped galvanised after manufacture to BS EN ISO 1461:1999. Special designs available on request e.g. Girder hanging, 90° Twist, side by side cables. Used to hang cables on walls and support structures.

CABLE HANGERS

Part No.	Ways	Dimensions mm						Material Size		Fixing Holes Dia.	Pack Qty	Weight g	
		A	B	C	D	E	F	W	Thickness				
CH1W1	1	145	105	20	105	-	37	40	6	11	1	500	Size 1 for cables up to 50mm Diameter
CH2W1	2	235	195	20	105	90	37	40	6	11	1	900	
CH3W1	3	325	285	20	105	90	37	40	6	11	1	1300	
CH4W1	4	415	375	20	105	90	37	40	6	11	1	1700	
CH5W1	5	505	465	20	105	90	37	40	6	11	1	2100	
CH6W1	6	595	555	20	105	90	37	40	6	11	1	2500	
CH1W2	1	170	130	20	130	-	50	50	6	13	1	820	Size 2 for cables 51 - 75mm Diameter
CH2W2	2	295	255	20	130	125	50	50	6	13	1	1480	
CH3W2	3	420	380	20	130	125	50	50	6	13	1	2240	
CH4W2	4	545	505	20	130	125	50	50	6	13	1	2980	
CH5W2	5	670	630	20	130	125	50	50	6	13	1	3710	
CH6W2	6	795	755	20	130	125	50	50	6	13	1	4440	
CH1W3	1	185	145	20	145	-	62	50	6	13	1	980	Size 3 for cables 76 - 100mm Diameter
CH2W3	2	345	305	20	145	160	62	50	6	13	1	1900	
CH3W3	3	505	465	20	145	160	62	50	6	13	1	2820	
CH4W3	4	665	625	20	145	160	62	50	6	15	1	3600	
CH5W3	5	825	785	20	145	160	62	50	6	15	1	4660	
CH6W3	6	985	945	20	145	160	62	50	6	15	1	5600	

Suspension Hooks

Manufactured in Mild Steel. Hot dipped galvanised after manufacture to BS EN ISO 1461:1999. Special designs available on request. Used to hang cables on walls and support structures.

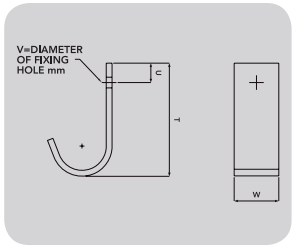
Type A

Type B

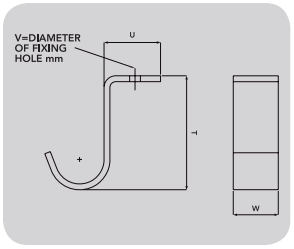
Type C

SUSPENSION HOOKS

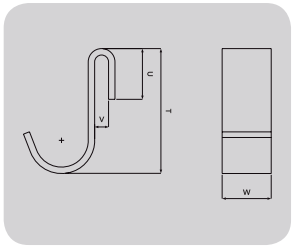
Part No.	Max Cable Dia.	Dimensions mm			Material Size		Pack Qty	Weight g	
		T	U	V	W	Thickness			
SHA1	50	105	25	11	40	6	1	320	Type A
SHA2	75	120	25	13	50	6	1	490	
SHA3	100	155	25	13	50	6	1	640	
SHB1	50	125	55	11	40	6	1	440	Type B
SHB2	75	140	60	13	50	6	1	680	
SHB3	100	150	60	13	50	6	1	780	
SHC1	50	125	40	13	40	6	1	460	Type C
SHC2	75	140	45	13	50	6	1	700	
SHC3	100	150	45	13	50	6	1	780	



Type A



Type B



Type C

Leather Suspenders

Manufactured in Leather with a hot dipped galvanised mild steel hook and brass eyelet. Used to support cables on catenary wire systems.

Part No.	Length mm	Width mm	Hook	Max Cable Dia. mm	Pack Qty	Weight g
CS6	152.4	19	Single	32	100	22
CS7	177.8	19	Single	38	100	22
CS8	203.3	19	Single	48	100	23
CS9	228.6	25.4	Single	54	100	27
CS10	254	25.4	Single	60	100	28
CS12	305	50.8	Double	72	50	64

Bespoke solutions and products

We understand that different markets and varying situations demand different solutions. And as problem solvers, we thrive on new challenges. So when our standard product range isn't quite what you need, we can still help.

Most requested

Our customers often require help with the following.

- Mounting products onto a non-standard structure.
- Manufacturing products in a non-standard format or size.
- Specialist surface treatments, such as painting, plating, or galvanizing.
- Developing a completely bespoke product.

We are well placed to meet these, and many other, requirements.

Specialist applications

Just like our standard products, our bespoke solutions are designed to withstand the toughest conditions, and can be made for specialist environments such as:

- High shock load
- High or low temperature
- A large temperature range
- Tunnel (including railway)
- Unusual or aggressive corrosion
- Fire

The market sectors we work with

A range of industries call upon our expertise, including:

- Power generation and distribution
- Transportation
- Water and other utilities
- Oil and gas (onshore and offshore)
- Defence
- Government agencies
- Construction
- Telecoms and data
- Original Equipment Manufacturers (OEMs)

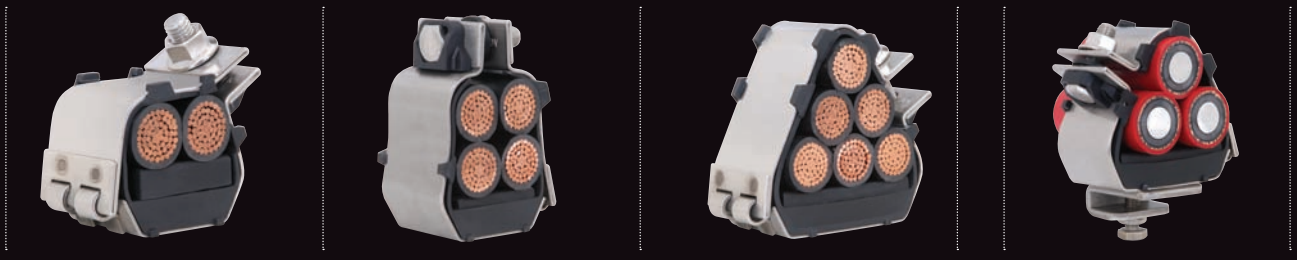
State of the art facilities

The new technology and rapid prototyping processes that we have adopted, mean that unique designs can be produced surprisingly quickly and economically, even in relatively small quantities.

Our facilities mean we can undertake a variety of work for your company: 3D CAD design, toolmaking, injection moulding, CNC machining, metal presswork, welding, and a range of testing (tensile, compression, fatigue, contribution to fire, impact, corrosion and short-circuit.)

The highest quality materials

We use the most robust materials to develop bespoke solutions that you can rely on; typically stainless steel (316L but also super duplex), mild steel, extruded and die cast aluminium, as well as thermoplastic polymer.



Standard Emperor products modified to suit 2,4 and 6 cable applications.

Standard Emperor product fitted with a universal base clamp designed to retrofit to three different undrilled ladder rung designs.

$$F_t = 0.17 \times i_p^2 / S$$

Short Circuits and Short Circuit Testing

During the design of an electrical installation, cable size will be specified and the maximum anticipated short circuit load will be calculated. Using this data, the force between the conductors in the event of a short circuit can be calculated and the correct cleats at the appropriate spacing can be determined.

Each range of cleats has different features and benefits and mechanical strength varies from product to product. Once the forces between the conductors in the event of a short circuit have been calculated and a cleat has been selected, the spacing is calculated for that specific cleat. If the cleat type is changed, the spacing must be recalculated for the new cleat's mechanical strength.

The only way to be able to guarantee the performance of a particular type of cleat is by subjecting it to a short circuit test. We know from experience that a cleat may withstand a certain mechanical load when subjected to a simple tensile test but it may fail when subjected to the same load in a short circuit because of the dynamic forces involved.

IEC 61914:2009 provides a method for cable cleats to be short circuit tested so that results for different types of cleats can be compared.

It is up to the cable cleat manufacturer to determine the fault level at which they wish to test their cleat. However, the cable must be unarmoured single core 600V/1000V stranded copper conductor cable and the testing assembly must be in accordance with the requirements of the standard.

For a range of cleats to be classified under the Standard at a particular fault level, it must undergo one or two short circuit tests depending on classification and afterwards:

- There shall be no failure that will affect the intended function of holding the cable in place.
- The cable cleats and intermediate restraints, if used, shall be intact with no missing parts (minor deformation is acceptable).
- There shall be no cuts or damage visible to the outer sheath of the cable caused by the cleats or intermediate restraints.

IEC 61914:2009 also provides formulae to enable the theoretical forces between conductors in the event of a short circuit to be calculated.

For a three phase short circuit with the cables in a trefoil configuration the maximum force on the conductor is:

$$F_t = 0.17 \times i_p^2 / S$$

Where:

F_t is the maximum force on the cable conductor (N/m)

i_p is the peak short circuit current (kA)

S is the centre to centre distance between the conductors, which equals the cable diameter in trefoil cable configurations (m)

When comparing short circuit test results for trefoil cleats, the fault level, cleat spacing and cable diameter must be known. It can only be said that a given cleat has specific short circuit withstand at a given cleat spacing for a specific cable diameter.

Ellis Patents Ltd has carried out over two hundred short circuit tests at independent test laboratories in the UK, Holland, Germany, Russia and the USA. Test certificates are available for all Ellis fault rated products. Technical advice regarding recommended cleat type and spacing for specific electrical installations is available on request.

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