

ELECTRICAL  
PRODUCT CATALOGUE

ELLIS

Holding Power



THORNE &  
**DERRICK**  
INTERNATIONAL

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[www.powerandcables.com](http://www.powerandcables.com)

# 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 IEC 61914, 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.

Balfour Beatty – Power Transmission and Distribution on the London Power Tunnels Project. Photograph showing a section of the tunnel between St Johns Wood and Kensal Green Substations, part of the London Power Tunnels 400kV project. The cable was installed onto Ellis Centaur saddles and secured using Ellis short circuit straps supplied to Sudkabel directly. Balfour Beatty carried out the cable installation using its bespoke cable installation machine.

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Products are supplied without mounting fixings.

# ALPHA™

Aluminium Trefoil Cleats  
Patent No. UK Patent GB 240 5900



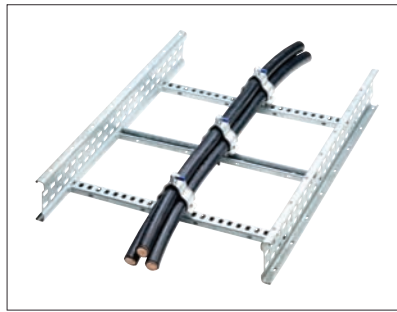
## A NEW, STRONGER ALTERNATIVE TO THE TRADITIONAL ALUMINIUM CLEAT

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.

| MAX S/C TEST LEVEL | CLEAT SPACING |
|--------------------|---------------|
| 96kA               | 600mm         |

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



Special options:  
Single versions available to specific cable diameters.

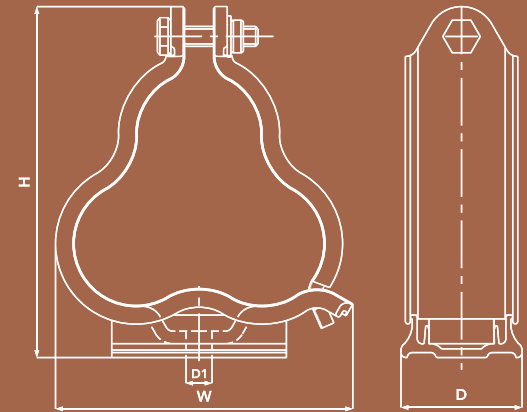
Polyester coating and alternative fasteners are available on request.



Polymer base



Aluminium base



# EMPEROR™

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



www.ellispatents.co.uk

## 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 pages 11/12 for details.)

| MAX S/C TEST LEVEL | CLEAT SPACING |
|--------------------|---------------|
| 156kA              | 600mm         |
| 195kA              | 300mm         |
| 235kA              | 225mm         |

## 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      |

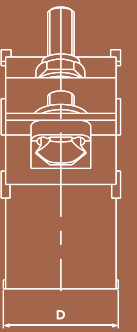
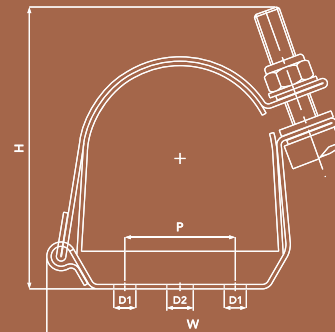
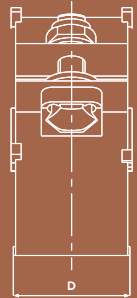
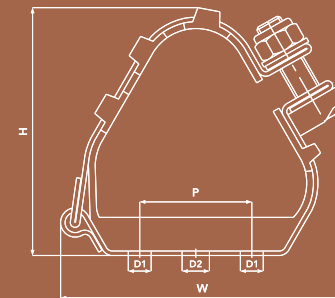
Special options: Other sizes available on request.



(American Bureau of Shipping)  
Type Approval.



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



# VULCAN+™

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



www.ellispatents.co.uk

## 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 pages 11/12 for details.)

| MAX S/C TEST LEVEL | CLEAT SPACING |
|--------------------|---------------|
| 104kA              | 600mm         |
| 132kA              | 300mm         |

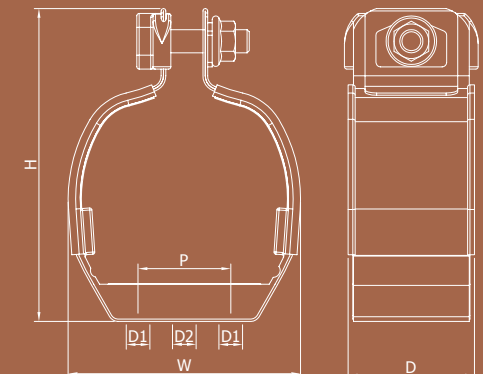
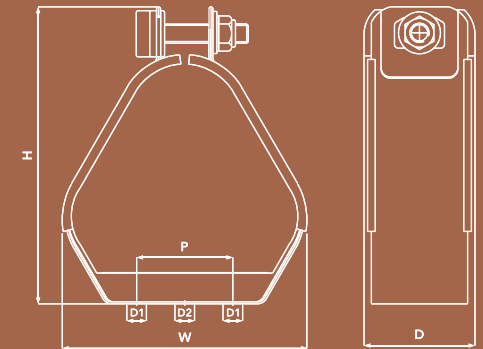


## SELECTION TABLE FOR TREFOIL AND SINGLE CABLE APPLICATION

| 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. | 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      |



# FLEXI-CLEAT™

A cable cleat based on Flexi-strap



## ADDING AN ALUMINIUM BASE TO FLEXI-STRAP CREATES FLEXI-CLEAT

Eight different bases cover cables ranging from 24mm – 80mm. Available in both standard and heavy duty form.

### FLEXI-CLEAT STANDARD DUTY

| Part No.  | Weight<br>g | Trefoil Range Take |         |
|-----------|-------------|--------------------|---------|
|           |             | Min. mm            | Max. mm |
| FC24-34SD | 266         | 24                 | 34      |
| FC30-41SD | 321         | 30                 | 41      |
| FC37-47SD | 385         | 37                 | 47      |
| FC43-54SD | 442         | 43                 | 54      |
| FC50-60SD | 510         | 50                 | 60      |
| FC56-67SD | 568         | 56                 | 67      |
| FC63-73SD | 638         | 63                 | 73      |
| FC69-80SD | 693         | 69                 | 80      |

### FLEXI-CLEAT HEAVY DUTY

| Part No.  | Weight<br>g | Trefoil Range Take |         |
|-----------|-------------|--------------------|---------|
|           |             | Min. mm            | Max. mm |
| FC24-34HD | 300         | 24                 | 34      |
| FC30-41HD | 362         | 30                 | 41      |
| FC37-47HD | 432         | 37                 | 47      |
| FC43-54HD | 495         | 43                 | 54      |
| FC50-60HD | 568         | 50                 | 60      |
| FC56-67HD | 633         | 56                 | 67      |
| FC63-73HD | 709         | 63                 | 73      |
| FC69-80HD | 776         | 69                 | 80      |

#### MAX S/C TEST LEVEL

Standard Duty 106kA

Heavy Duty 159kA

#### CLEAT SPACING

600mm

600mm

# FLEXI-STRAP™

Intermediate Short-circuit Strap  
Patent No. UK Patent GB 252 6331

In its standard duty form (SD) Flexi-strap is typically paired with our Vulcan+ cleats and wrapped twice around the cables. In its heavy duty form (HD) it is typically paired with our Emperor cleats and wrapped three times around the cables. Flexi-strap is usually supplied with a Low Smoke and Fume Zero Halogen Polymeric liner. For installation, a proprietary drive socket is provided with the straps, suitable for use with a standard ¼" or 6mm ratchet handle. A 10mm spanner is also required.



Flexi-strap 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. Flexi-strap can also be used to contain bundles of cable. Please contact our sales office with details of your particular requirement.

## FLEXI-STRAP STANDARD DUTY

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

## FLEXI-STRAP HEAVY DUTY

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

MAX S/C TEST LEVEL

105kA

STRAP SPACING

600mm

# PROTECT™

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.

| MAX S/C TEST LEVEL | CLEAT SPACING |
|--------------------|---------------|
| 136kA              | 300mm         |

# MATRIX™

A Flexible Solution for Multiple Cables



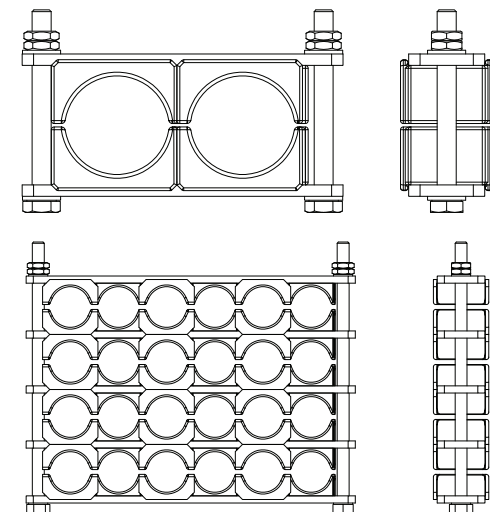
THE MATRIX CABLE CLEAT PROVIDES A SPACE SAVING SOLUTION TO THE PROBLEMS OF CLEATING MULTIPLE CABLE RUNS TO CABLE LADDER OR STEEL FRAMEWORKS

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.

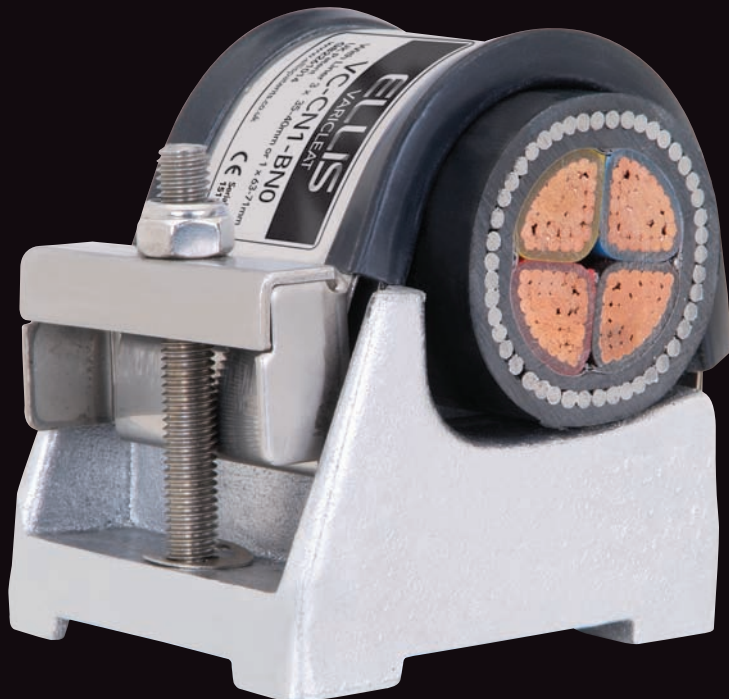
Matrix can be supplied for cables from 20mm – 70mm diameter and in any combination of ways e.g. 1x2, 2x1, up to 20x5 or more.

Please contact us for further details.



# VARI-CLEAT™

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. 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 pages 11/12 for details.)

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| MAX S/C TEST LEVEL | CLEAT SPACING |
|--------------------|---------------|
| 101kA              | 600mm         |

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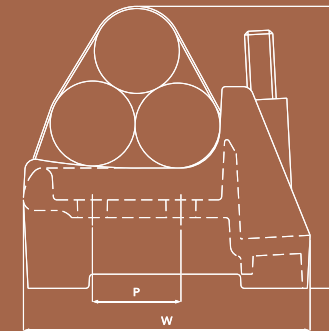
## SELECTION TABLE FOR SINGLE AND TREFOIL APPLICATION

| Part No.<br>- Suffix<br>(See below) | Cable Range No Liner |                   | Cable Range With Liner |                   | Dimensions mm |     |    |     | Fixing Holes     | Weight<br>g |
|-------------------------------------|----------------------|-------------------|------------------------|-------------------|---------------|-----|----|-----|------------------|-------------|
|                                     | Trefoil<br>Dia. mm   | Single<br>Dia. mm | Trefoil<br>Dia. mm     | Single<br>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             | 42-47                  | 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        |

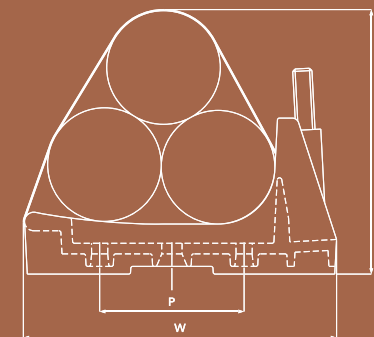
| Suffix                |
|-----------------------|
| A No liner            |
| B Lined               |
| C Heavy Duty No liner |
| D Heavy Duty Lined    |



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



Base Sizes AN, BN & CN



Base Sizes DN, EN, FN, GN & HN

# ATLAS™

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



WHEN YOU NEED CLEATS THAT  
WITHSTAND HIGH LEVELS OF  
SHORT-CIRCUIT, AND 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.

| MAX S/C TEST LEVEL | CLEAT SPACING |
|--------------------|---------------|
| 112kA              | 750mm         |



## SELECTION TABLE FOR TREFOIL CABLE APPLICATION

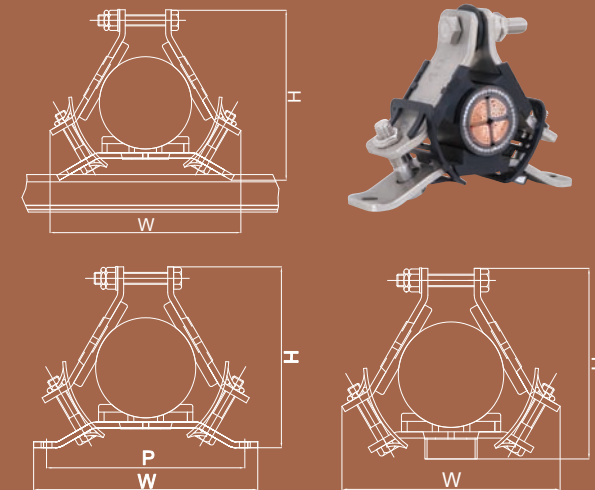
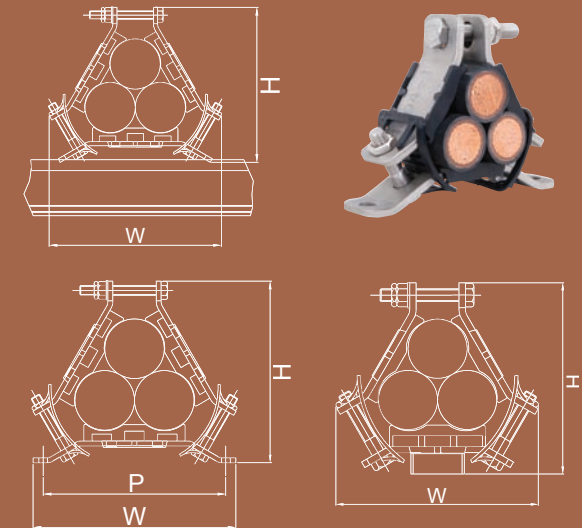
| Part No. | Cable Dia. Range mm | Dimensions mm |     |    |     |              |             |     |     |              |                 |     |     | Weight g |              |
|----------|---------------------|---------------|-----|----|-----|--------------|-------------|-----|-----|--------------|-----------------|-----|-----|----------|--------------|
|          |                     | 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



# COLOSSUS™

Hybrid Cable Cleat  
Community Design Application No: 001927583



## WHEN YOU NEED CLEATS THAT WITHSTAND MODERATE LEVELS OF SHORT-CIRCUIT

Our Colossus cleats are a direct alternative to the all polymer (polyamide) cleats offered by some manufacturers. The unique design of Colossus combines a Low Smoke and Fume Zero Halogen polymer frame with the strength of a 316L stainless steel skeleton.

The strength of polymer cleats is typically quoted in Newtons and depending on the variant, range from 10,000N – 30,000N. On the same basis, all Colossus cleats have a strength of 63,000N irrespective of variant.

The composite structure of Colossus allows a compact design, which in turn allows for closer cable runs, in comparison to its all polymer competitors. The stainless steel element of Colossus ensures that the effects of UV radiation and “creep” (exhibited by all thermoplastic polymers) can be ignored. Colossus cleats will also retain cables (whatever the mounting orientation) in the event of a fire.

With its depth increasing across the range, Colossus is ideally suited for cleating very large diameter cables in trefoil (up to 170mm). The saddled version of Colossus is ideal for cleating cables simply supported at large centres, typically from 3 to 8 metres.

### MAX S/C TEST LEVEL

104kA

### CLEAT SPACING

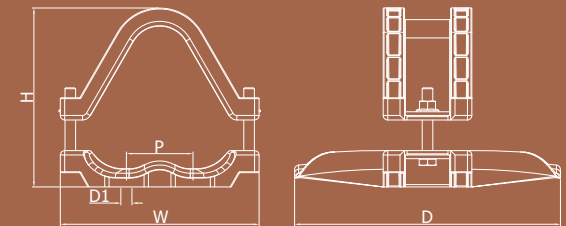
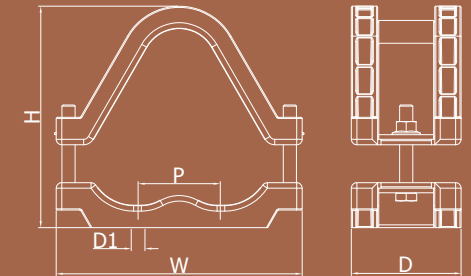
Colossus every 7.8m with intermediate straps every 1.3m

## COLOSSUS CLEAT

| Part No.   | Cable Range |             | Dimensions mm |     |     |     |                   | Weight g |
|------------|-------------|-------------|---------------|-----|-----|-----|-------------------|----------|
|            | Min Dia. mm | Max Dia. mm | W             | H   | D   | P   | Fixing Holes      |          |
| COL24-29   | 24          | 29          | 128           | 87  | 60  | 25  | 2 x M10 + 1 x M12 | 1097     |
| COL27-32   | 27          | 32          | 133           | 92  | 60  | 25  | 2 x M10 + 1 x M12 | 1125     |
| COL30-36   | 30          | 36          | 137           | 101 | 60  | 25  | 2 x M10 + 1 x M12 | 1146     |
| COL34-41   | 34          | 41          | 146           | 110 | 60  | 25  | 2 x M10 + 1 x M12 | 1218     |
| COL39-47   | 39          | 47          | 157           | 122 | 60  | 25  | 2 x M10 + 1 x M12 | 1280     |
| COL45-54   | 45          | 54          | 171           | 141 | 70  | 50  | 2 x M10           | 1455     |
| COL52-62   | 52          | 62          | 185           | 156 | 70  | 50  | 2 x M10           | 1568     |
| COL60-72   | 60          | 72          | 204           | 176 | 70  | 50  | 2 x M10           | 1682     |
| COL69-83   | 69          | 83          | 225           | 202 | 100 | 75  | 2 x M12           | 2212     |
| COL79-95   | 79          | 95          | 247           | 225 | 100 | 75  | 2 x M12           | 2374     |
| COL91-109  | 91          | 109         | 273           | 253 | 100 | 120 | 2 x M12           | 2588     |
| COL105-126 | 105         | 126         | 306           | 286 | 150 | 120 | 2 x M12           | 3737     |
| COL122-146 | 122         | 146         | 345           | 324 | 150 | 150 | 2 x M12           | 4135     |
| COL142-170 | 142         | 170         | 390           | 371 | 150 | 150 | 2 x M12           | 4633     |

## SADDLED COLOSSUS CLEATS

| Part No.     | Cable Range |             | Dimensions mm |     |     |     |              | Weight g |
|--------------|-------------|-------------|---------------|-----|-----|-----|--------------|----------|
|              | Min Dia. mm | Max Dia. mm | W             | H   | D   | P   | Fixing Holes |          |
| COL69-83SC   | 69          | 83          | 225           | 202 | 300 | 75  | 2 x M12      | 2532     |
| COL79-95SC   | 79          | 95          | 247           | 225 | 300 | 75  | 2 x M12      | 2726     |
| COL91-109SC  | 91          | 109         | 273           | 253 | 300 | 120 | 2 x M12      | 2995     |
| COL105-126SC | 105         | 126         | 306           | 286 | 300 | 120 | 2 x M12      | 4108     |
| COL122-146SC | 122         | 146         | 345           | 324 | 300 | 150 | 2 x M12      | 4562     |
| COL142-170SC | 142         | 170         | 390           | 371 | 300 | 150 | 2 x M12      | 5095     |



# CENTAUR<sup>®</sup>

Cable Saddle, UK Patent App. No. 0805128.6  
European Patent No. 1973211, US Patent No. 8398033  
Community Design Registration No. 000749999



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.

| MAX S/C TEST LEVEL | CLEAT SPACING |
|--------------------|---------------|
| 64kA RMS 1sec      | 8.4m          |
| 163 kA Peak        |               |

| 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             | 600mm                  |
| CS100-112/600 | 100-112             |                        |
| CS108-122/600 | 108-122             |                        |
| CS120-132/600 | 120-132             |                        |
| CS128-142/600 | 128-142             |                        |
| CS140-152/600 | 140-152             | 800mm                  |
| CS148-162/600 | 148-162             |                        |
| CS100-112/800 | 100-112             |                        |
| CS108-122/800 | 108-122             |                        |
| CS120-132/800 | 120-132             |                        |
| CS128-142/800 | 128-142             | 800mm                  |
| CS140-152/800 | 140-152             |                        |
| CS148-162/800 | 148-162             |                        |



# CABLE GUIDE CLAMP™

Combined Cable Guide and Cable Clamp  
Patent Applied for: GB1309223.4

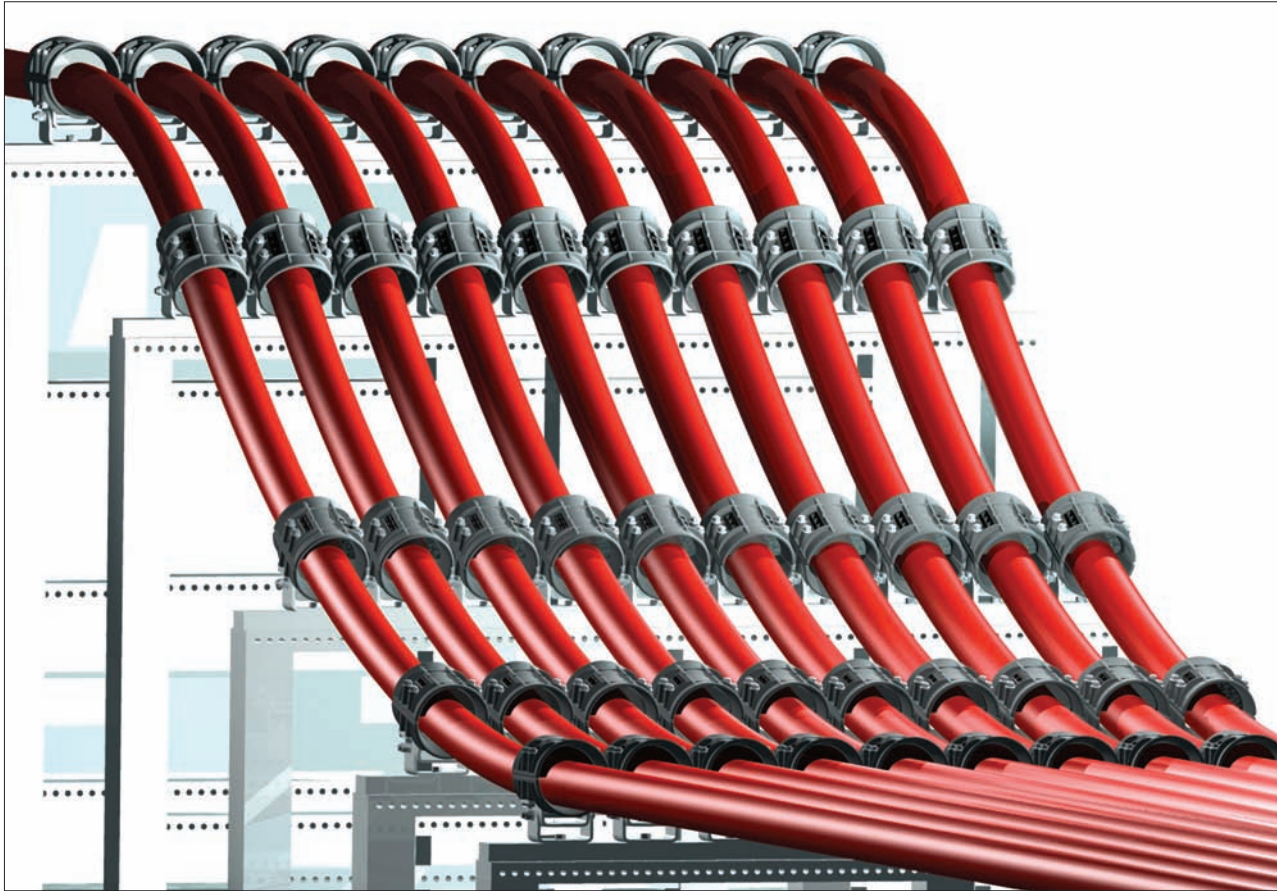


CABLE GUIDE CLAMPS ARE AVAILABLE FOR SINGLE CABLE APPLICATIONS WHERE A CABLE GUIDE AND CLAMPING SYSTEM IS REQUIRED FOR LARGE DIAMETER CABLES

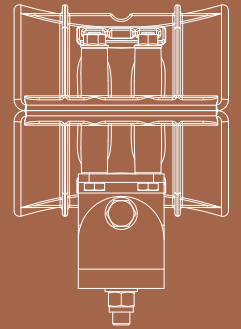
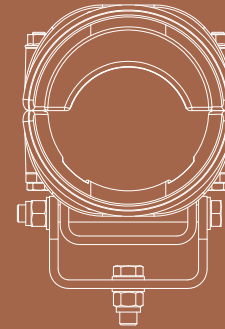
The Cable Guide Clamp is a unique combination of cable guide and cable clamp.

Designed to be installed along the cable route in place of rollers, cable is pushed and pulled through the guide to its final location. The Cable Guide Clamp's fully gimballed mounting and slippery nylon construction ensures that friction is minimised. Once the cables are in position, the top half of the Cable Guide Clamp is removed, an LSF Polymeric insert is added and the lid replaced, which turns the Cable Guide Clamp from a guide into a clamp.

The Cable Guide Clamp is constructed from an immensely strong glass filled nylon and its design has been optimised using FEA analysis. It is supplied complete with a fully galvanised full gimballed heavy duty mounting frame, ready for fixing to the support structure. It is also supplied with an LSF Polymeric pad specifically sized for the cable being installed.

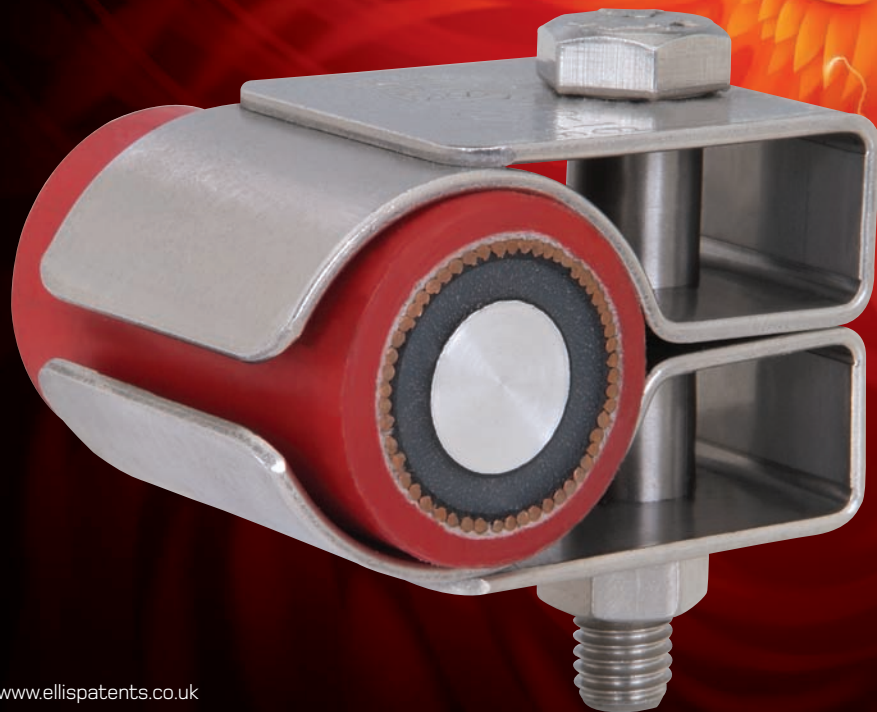


A computer simulation of the Cable Guide Clamp installed on a wind farm substation in the North Sea. Actual image unavailable due to reasons of confidentiality.



# PHOENIX<sup>®</sup>

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



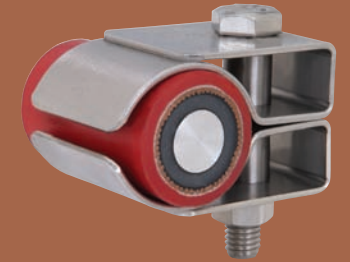
**WHEN YOU NEED CABLE  
CLAMPS THAT ARE FIREPROOF,  
CORROSION RESISTANT AND  
EASY TO FIT**

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.

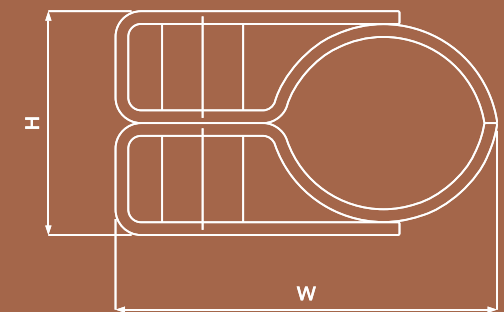
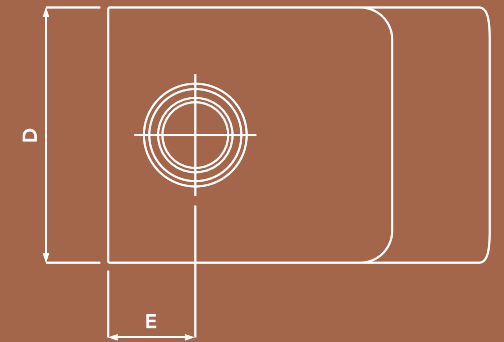
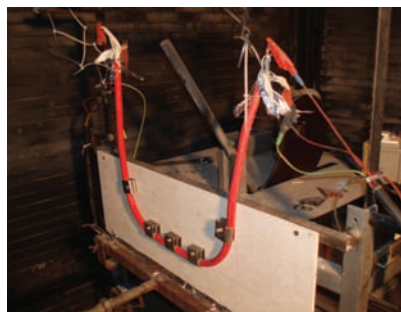
To prove their fire resistance these cleats were used to secure a fire rated cable during a series of tests in accordance with BS 5839-1:2002, Section 26.2d. The cleats successfully supported the cable during the test and the performance was as expected given the physical characteristics of 316L stainless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

| MAX S/C TEST LEVEL | CLEAT SPACING |
|--------------------|---------------|
| 60kA               | 600mm         |

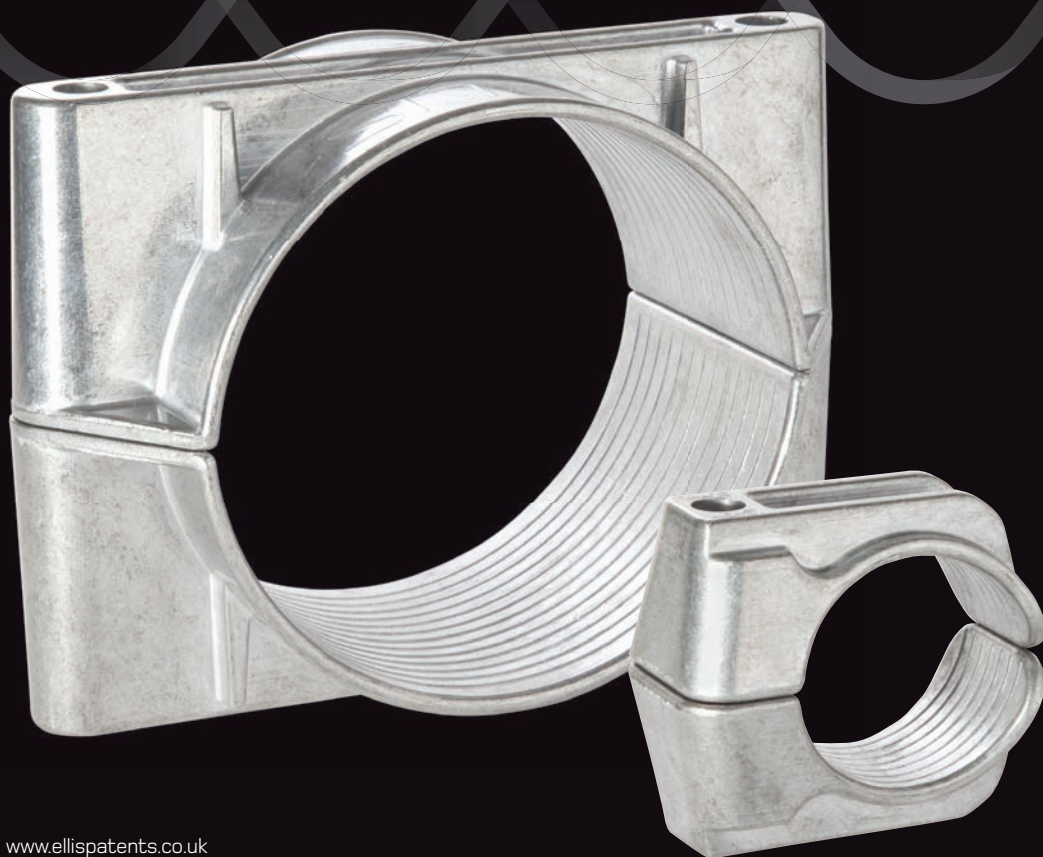




| Part No. | Cable Range<br>Dia. mm | Dimensions mm |    |    |      |              | Weight<br>g |
|----------|------------------------|---------------|----|----|------|--------------|-------------|
|          |                        | W             | H  | D  | E    | Fixing Holes |             |
| 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         |



# ONE & TWO HOLE CABLECLAMPS - ALUMINIUM



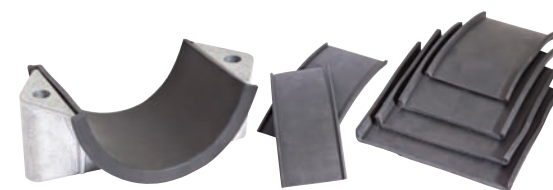
## DIE CAST ALUMINIUM CLAMP FOR SINGLE CABLES

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.

Two hole cable clamps can be supplied with a neoprene liner on request ('L' should be added as a suffix to the part number).

Neoprene liners vary in width and thickness according to the clamp they are designed for. All liners have sidewall up-stands for secure location within the clamp.

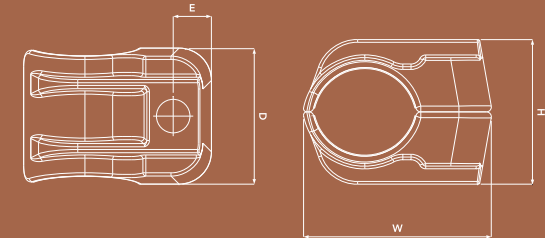
Manufactured from Neoprene the liners are rated V0 and have a carefully selected hardness to enable them to accommodate a cable's diametric thermal expansion.



Neoprene liners

## ONE HOLE CABLECLAMP

| Part No. | Cable Range Dia. mm | Dimensions mm |      |      |      | Fixing Holes | Pack Qty | Item Weight g |
|----------|---------------------|---------------|------|------|------|--------------|----------|---------------|
|          |                     | W             | H    | D    | E    |              |          |               |
| 1A-10N   | 10-13               | 37.8          | 27.0 | 41.4 | 10.2 | 1 x M10      | 1        | 43            |
| 1A-11N   | 13-16               | 41.2          | 30.0 | 41.4 | 10.4 | 1 x M10      | 1        | 52            |
| 1A-12N   | 16-19               | 44.3          | 33.0 | 41.4 | 10.7 | 1 x M10      | 1        | 61            |
| 1A-13N   | 19-23               | 48.2          | 36.0 | 41.4 | 10.9 | 1 x M10      | 1        | 68            |
| 1A-14N   | 23-27               | 52.2          | 40.0 | 41.4 | 11.3 | 1 x M10      | 1        | 78            |
| 1A-15N   | 27-32               | 57.1          | 44.0 | 41.4 | 11.6 | 1 x M10      | 1        | 85            |
| 1A-16N   | 32-38               | 63.1          | 49.0 | 41.4 | 12.1 | 1 x M10      | 1        | 97            |
| 1A-17N   | 38-46               | 71.3          | 58.0 | 41.4 | 12.9 | 1 x M10      | 1        | 121           |
| 1A-18N   | 46-51               | 77.3          | 67.0 | 41.4 | 13.5 | 1 x M10      | 1        | 155           |
| 1A-19N   | 51-57               | 83.2          | 72.0 | 41.4 | 13.9 | 1 x M10      | 1        | 171           |

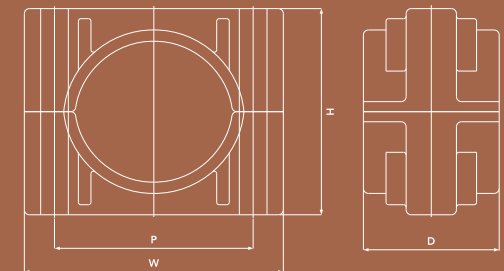


## TWO HOLE CABLECLAMP

| Part No. | Cable Range Dia. mm | Liner Thickness | Range Take with Liner | Dimensions mm |     |    |     | Fixing Holes | Pack Qty | Item Weight g |
|----------|---------------------|-----------------|-----------------------|---------------|-----|----|-----|--------------|----------|---------------|
|          |                     |                 |                       | W             | H   | D  | P   |              |          |               |
| 2A-07N   | 38-46               | 3               | 32-40                 | 94            | 48  | 49 | 68  | 2 x M10      | 1        | 174           |
| 2A-08N   | 46-51               | 3               | 40-45                 | 104           | 54  | 49 | 79  | 2 x M10      | 1        | 214           |
| 2A-09N   | 51-57               | 3               | 45-51                 | 105           | 61  | 49 | 79  | 2 x M10      | 1        | 224           |
| 2A-10N   | 57-64               | 3               | 51-58                 | 105           | 68  | 49 | 79  | 2 x M10      | 1        | 234           |
| 2A-11N   | 64-70               | 3               | 58-64                 | 133           | 74  | 64 | 106 | 2 x M10      | 1        | 360           |
| 2A-1200N | 70-76               | 3               | 64-70                 | 133           | 80  | 64 | 106 | 2 x M10      | 1        | 376           |
| 2A-1201N | 76-83               | 3               | 70-77                 | 133           | 87  | 64 | 106 | 2 x M10      | 1        | 388           |
| 2A-1202N | 83-90               | 3               | 77-84                 | 133           | 94  | 64 | 106 | 2 x M10      | 1        | 392           |
| 2A-131N  | 90-97               | 4               | 82-89                 | 154           | 101 | 76 | 126 | 2 x M10      | 1        | 520           |
| 2A-132N  | 97-105              | 4               | 89-97                 | 154           | 109 | 76 | 126 | 2 x M10      | 1        | 524           |
| 2A-141N  | 105-112             | 4               | 97-104                | 165           | 118 | 76 | 135 | 2 x M10      | 1        | 590           |
| 2A-142N  | 112-120             | 4               | 104-112               | 173           | 124 | 76 | 143 | 2 x M10      | 1        | 642           |

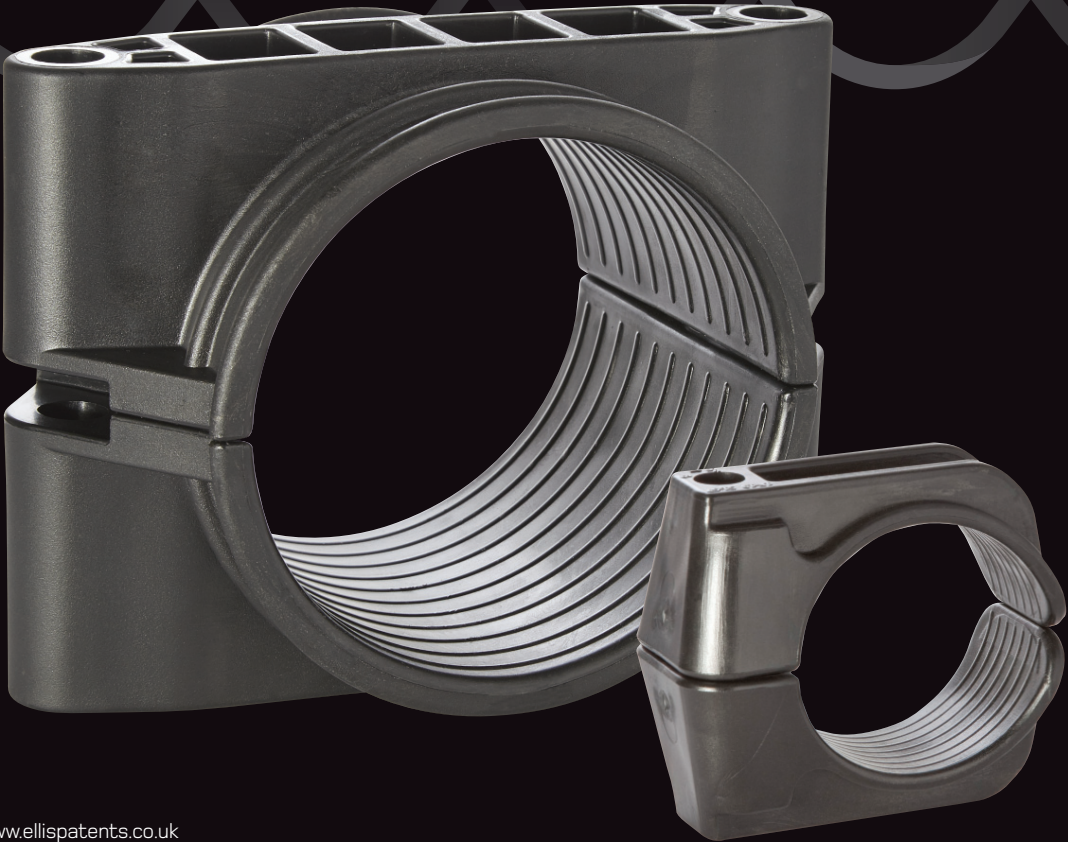
If liner ordered add 'L' as suffix to Part No. eg: 2A-07L.

Specials: For cable diameters above 112mm please contact our sales office.



# ONE & TWO HOLE CABLECLAMPS - NON METALLIC

UK Design Reg. No: 355854



## INJECTION MOULDED POLYMER CLAMP FOR SINGLE CABLES

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

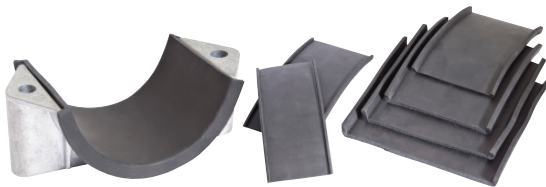
Used to fix power cables in indoor and outdoor applications.

Two hole cable clamps can be supplied with a neoprene liner on request ('L' should be added as a suffix to the part number).

Neoprene liners vary in width and thickness according to the clamp they are designed for. All liners have sidewall up-stands for secure location within the clamp.

Manufactured from Neoprene the liners are rated V0 and have a carefully selected hardness to enable them to accommodate a cable's diametric thermal expansion.

| MAX S/C TEST LEVEL<br>(Multi-core Cable) | CLEAT SPACING |
|--|---------------|
| 76kA                                     | 600mm         |



Neoprene liners

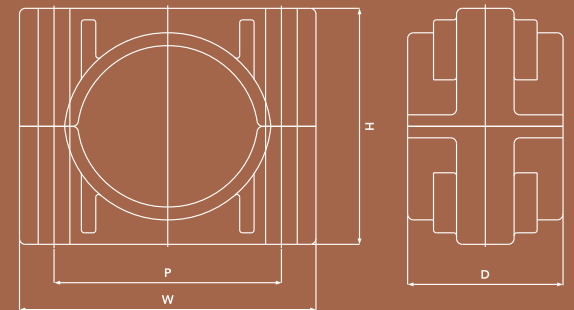
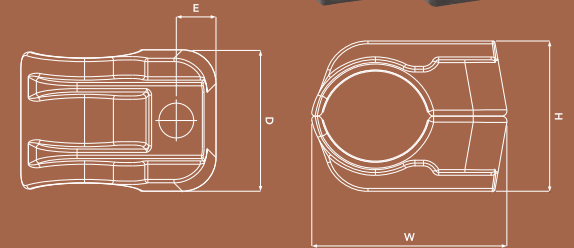
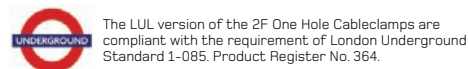
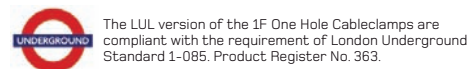
## ONE HOLE CABLECLAMP

| Part No. | Material Suffix | Cable Range Dia. 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 |

## TWO HOLE CABLECLAMP

| Part No. | Material Suffix | Cable Range Dia. mm | Liner Thickness | Range Take with Liner | Dimensions mm |     |     |     | Fixing Holes | Pack Qty | Weight g |        |        |
|----------|-----------------|---------------------|-----------------|-----------------------|---------------|-----|-----|-----|--------------|----------|----------|--------|--------|
|          |                 |                     |                 |                       | W             | H   | D   | P   |              |          | B        | LSF    | LUL    |
| 2F+07    | B/LSF/LUL       | 38-46               | 3               | 32-40                 | 92            | 60  | 54  | 68  | 2 x M10      | 25       | 73.0     | 91.0   | 119.0  |
| 2F+08    | B/LSF/LUL       | 46-51               | 3               | 40-45                 | 103           | 71  | 54  | 79  | 2 x M10      | 25       | 80.9     | 109.9  | 132.0  |
| 2F+09    | B/LSF/LUL       | 51-57               | 3               | 45-51                 | 103           | 76  | 54  | 79  | 2 x M10      | 25       | 95.0     | 119.0  | 155.0  |
| 2F+10    | B/LSF/LUL       | 57-64               | 3               | 51-58                 | 103           | 82  | 54  | 79  | 2 x M10      | 25       | 89.1     | 122.5  | 156.5  |
| 2F+11    | B/LSF/LUL       | 64-70               | 3               | 58-64                 | 130           | 89  | 54  | 106 | 2 x M10      | 10       | 116.0    | 157.3  | 189.0  |
| 2F+1200  | B/LSF/LUL       | 70-76               | 4               | 62-68                 | 128           | 95  | 75  | 104 | 2 x M12      | 10       | 160.1    | 190.0  | 285.0  |
| 2F+1201  | B/LSF/LUL       | 76-83               | 4               | 68-75                 | 135           | 100 | 75  | 111 | 2 x M12      | 10       | 174.0    | 206.5  | 309.8  |
| 2F+1202  | B/LSF/LUL       | 83-90               | 4               | 75-82                 | 143           | 108 | 75  | 119 | 2 x M12      | 10       | 188.3    | 228.6  | 342.9  |
| 2F+131   | B/LSF/LUL       | 90-97               | 5               | 80-87                 | 165           | 115 | 100 | 138 | 2 x M12      | 5        | 335.5    | 423.0  | 634.5  |
| 2F+132   | B/LSF/LUL       | 97-105              | 5               | 87-95                 | 171           | 122 | 100 | 144 | 2 x M12      | 5        | 355.1    | 440.6  | 660.9  |
| 2F+141   | B/LSF/LUL       | 105-112             | 5               | 95-102                | 178           | 130 | 100 | 151 | 2 x M12      | 5        | 382.4    | 509.9  | 764.9  |
| 2F+142   | B/LSF/LUL       | 112-120             | 5               | 102-110               | 187           | 138 | 125 | 160 | 2 x M12      | 5        | 495.6    | 622.0  | 933.0  |
| 2F+151   | B/LSF/LUL       | 120-128             | 5               | 110-118               | 196           | 148 | 125 | 168 | 2 x M12      | 5        | 536.8    | 715.7  | 1073.5 |
| 2F+152   | B/LSF/LUL       | 128-135             | 5               | 118-125               | 203           | 158 | 125 | 176 | 2 x M12      | 5        | 578.9    | 771.9  | 1157.9 |
| 2F+161   | B/LSF/LUL       | 135-144             | 5               | 125-134               | 222           | 168 | 150 | 190 | 2 x M16      | 5        | 831.3    | 1108.4 | 1662.7 |
| 2F+162   | B/LSF/LUL       | 144-152             | 5               | 134-142               | 232           | 179 | 150 | 200 | 2 x M16      | 5        | 902.3    | 1203.1 | 1804.6 |
| 2F+171   | B/LSF/LUL       | 152-160             | 5               | 142-150               | 242           | 190 | 150 | 210 | 2 x M16      | 5        | 976.2    | 1301.6 | 1952.4 |
| 2F+172   | B/LSF/LUL       | 160-168             | 5               | 150-158               | 252           | 201 | 150 | 220 | 2 x M16      | 5        | 1052.1   | 1402.9 | 2104.3 |

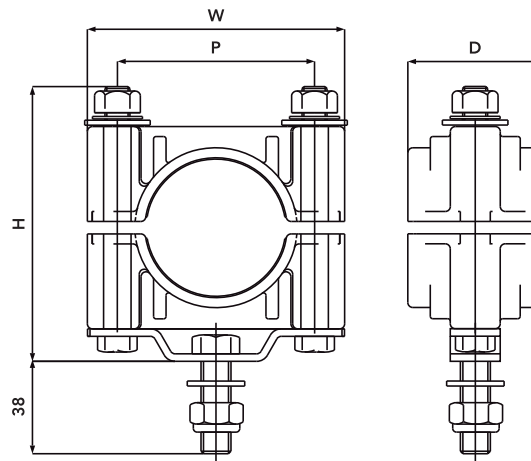
If liner ordered add 'L' as suffix to Part No. eg: 2F-07BL, 2F-07LSFL and 2F-07LULL.



# HEAVY DUTY SINGLE BOLT FIXING

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   |
| 2F+AS-08   | B or LSF        | Y                        | 46-51              | 103           | 110 | 54 | 38 | 353.9    | 382.9 |
| 2F+AS-09   | B or LSF        | Y                        | 51-57              | 103           | 110 | 54 | 38 | 368      | 392   |
| 2F+AS-10   | B or LSF        | Y                        | 57-64              | 103           | 110 | 54 | 38 | 362.1    | 395.5 |
| 2F+AS-11   | B or LSF        | Y                        | 64-70              | 130           | 143 | 54 | 38 | 433      | 474.3 |
| 2F+AS-1200 | B or LSF        | Y                        | 70-76              | 128           | 143 | 75 | 38 | 477.1    | 507   |
| 2F+AS-1201 | B or LSF        | Y                        | 76-83              | 135           | 148 | 75 | 38 | 491      | 523.5 |
| 2F+AS-1202 | B or LSF        | Y                        | 83-90              | 143           | 156 | 75 | 38 | 505.3    | 545.6 |



# TRIPLEX CABLE SURROUND

## 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. Used to fix power cables in indoor and outdoor applications.

| Part No. | Triplex Cable Range |             | Depth mm | Weight g |
|----------|---------------------|-------------|----------|----------|
|          | Min Dia. mm         | Max Dia. mm |          |          |
| SFT26    | 24                  | 28          | 62       | 67.3     |
| SFT31    | 28                  | 34          | 62       | 87.0     |
| SFT36    | 33                  | 39          | 62       | 113.4    |
| SFT43    | 39                  | 47          | 62       | 140.0    |
| SFT51    | 47                  | 55          | 62       | 212.3    |

Tested in line with EN 50368:2003

| MAX S/C TEST LEVEL<br>(within 2F Clamps) | CLEAT SPACING |
|--|---------------|
| 76kA                                     | 600mm         |



## CABLE CLEAT SELECTION DETAIL FOR CLEATS TO BE USED WITH THE SFT SURROUND FOR TRIPLEX CABLE

| Cable Core Outside | SFT Outside Diameter | Adaptor Type | Cleat Vulcan+ | Cleat Emperor | 2F+ Clamp |
|--------------------|----------------------|--------------|---------------|---------------|-----------|
| 24                 | 56                   | SFT26        | VRT+03        | ES51-59       | 9         |
| 25                 | 58                   | SFT26        | VRT+03        | ES51-59       | 10        |
| 26                 | 59                   | SFT26        | VRT+03        | ES58-66       | 10        |
| 27                 | 61                   | SFT26        | VRT+04        | ES58-66       | 10        |
| 28                 | 63                   | SFT26        | VRT+04        | ES58-66       | 10        |
| 28                 | 66                   | SFT31        | VRT+04        | ES65-73       | 11        |
| 29                 | 68                   | SFT31        | VRT+04        | ES65-73       | 11        |
| 30                 | 70                   | SFT31        | VRT+05        | ES65-73       | 11        |
| 31                 | 72                   | SFT31        | VRT+05        | ES65-73       | -         |
| 32                 | 73.5                 | SFT31        | VRT+05        | ES73-85       | -         |
| 33                 | 75                   | SFT31        | VRT+06        | ES73-85       | -         |
| 34                 | 77                   | SFT31        | VRT+06        | ES73-85       | -         |
| 33                 | 77                   | SFT36        | VRT+07        | ES73-85       | -         |
| 34                 | 79                   | SFT36        | VRT+07        | ES73-85       | -         |
| 35                 | 80                   | SFT36        | VRT+07        | ES73-85       | -         |
| 36                 | 83                   | SFT36        | VRT+07        | ES73-85       | -         |
| 37                 | 85                   | SFT36        | VRT+07        | ES84-94       | -         |
| 38                 | 86                   | SFT36        | VRT+07        | ES84-94       | -         |
| 39                 | 87                   | SFT36        | VRT+07        | ES84-94       | -         |
| 39                 | 92                   | SFT43        | VRT+08        | ES84-94       | -         |
| 40                 | 94                   | SFT43        | VRT+08        | ES94-118      | -         |
| 41                 | 96                   | SFT43        | VRT+08        | ES94-118      | -         |
| 42                 | 98                   | SFT43        | VRT+09        | ES94-118      | -         |
| 43                 | 100                  | SFT43        | VRT+09        | ES94-118      | -         |
| 44                 | 101                  | SFT43        | VRT+09        | ES94-118      | -         |
| 45                 | 103                  | SFT43        | VRT+10        | ES94-118      | -         |
| 46                 | 104.5                | SFT43        | VRT+10        | ES94-118      | -         |
| 47                 | 106                  | SFT43        | VRT+10        | ES94-118      | -         |
| 47                 | 107                  | SFT51        | VRT+12        | ES94-118      | -         |
| 48                 | 109                  | SFT51        | VRT+12        | ES94-118      | -         |
| 49                 | 111                  | SFT51        | VRT+12        | ES94-118      | -         |
| 50                 | 113.5                | SFT51        | VRT+12        | ES94-118      | -         |
| 51                 | 115.5                | SFT51        | VRT+12        | ES94-118      | -         |
| 52                 | 118                  | SFT51        | VRT+12        | ES94-118      | -         |
| 53                 | 120                  | SFT51        | VRT+12        | ES118-130     | -         |
| 54                 | 122.5                | SFT51        | VRT+12        | ES118-130     | -         |
| 55                 | 125                  | SFT51        | VRT+12        | ES118-130     | -         |



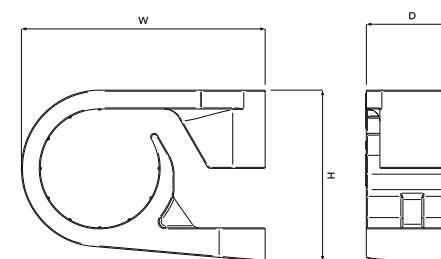
# INDUSTRIAL CABLECLAMP

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 |



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

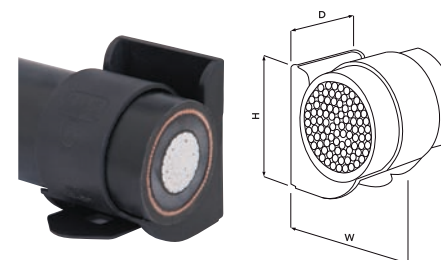


# ELITE RANGE-TAKER CABLECLAMP

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 |

**Tested in line with EN 50368:2003**





# 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.

## 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 1/8           | 5/16            | 2             | 7/16 x 5/16                   | 100      | 12       |
| 60-05    | B or FR         | 1 1/4 x 1/8       | 3/8             | 2 5/8         | 7/16 x 5/16                   | 100      | 21       |
| 60-06    | B or FR         | 1 1/4 x 3/16      | 5/16            | 2 5/8         | 7/16 x 5/16                   | 100      | 20       |
| 60-08    | B or FR         | 1 1/2 x 3/16      | 5/16            | 2 5/8         | 7/16 x 5/16                   | 100      | 20       |
| 60-10    | B or FR         | 1 1/2 x 1/8       | 3/8             | 2 5/8         | 7/16 x 5/16                   | 100      | 20       |
| 60-15    | B or FR         | 2 x 1/8           | 1/4             | 3 1/8         | 7/16 x 5/16                   | 100      | 24       |
| 60-26    | B or FR         | 1 x 1/8           | 3/4             | 2 1/8         | 7/16 x 5/16                   | 100      | 16       |
| 60-27    | B or FR         | 1 x 3/16          | 5/8             | 2 1/8         | 7/16 x 5/16                   | 100      | 16       |
| 60-28    | B or FR         | 1 1/2 x 3/16      | 5/8             | 2 7/8         | 7/16 x 5/16                   | 100      | 25       |
| 60-32    | B or FR         | 1 1/4 x 1/4       | 5/8             | 3             | 7/16 x 5/16                   | 100      | 25       |
| 60-34    | B or FR         | 1 1/2 x 1/8       | 3/4             | 3             | 7/16 x 5/16                   | 100      | 25       |
| 60-36    | B or FR         | 1 1/2 x 1/4       | 5/8             | 3             | 7/16 x 5/16                   | 100      | 24       |
| 60-37    | B or FR         | 1 1/2 x 3/8       | 3/8             | 2 7/8         | 7/16 x 5/16                   | 100      | 23       |
| 60-38    | B or FR         | 1 3/4 x 1/8       | 3/4             | 3 3/8         | 7/16 x 5/16                   | 100      | 27       |
| 60-39    | B or FR         | 1 3/4 x 1/4       | 5/8             | 3 3/8         | 7/16 x 5/16                   | 100      | 27       |
| 60-40    | B or FR         | 2 x 1/8           | 3/4             | 3 3/8         | 7/16 x 5/16                   | 100      | 30       |
| 60-42    | B or FR         | 2 x 1/4           | 5/8             | 3 3/8         | 7/16 x 5/16                   | 100      | 25       |
| 60-44    | B or FR         | 2 x 3/8           | 3/8             | 3 3/8         | 7/16 x 5/16                   | 100      | 24       |



## 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       | 41       |

# 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     |

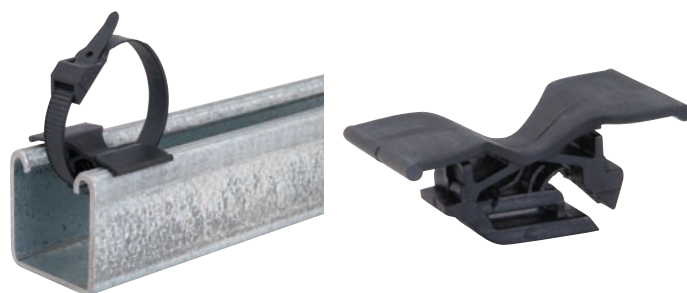


# FRAMING CHANNEL ACCESSORIES

## 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.

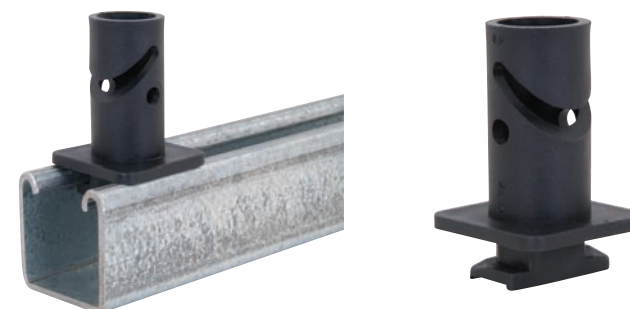
| Part No.  | Description                    | Size mm | Material Suffix | Colour | Pack Qty | Weight g |
|-----------|--------------------------------|---------|-----------------|--------|----------|----------|
| 91-ECLB   | 'EC' type channel end cap      | 41 x 41 | PP              | Black  | 100      | 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 | 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-TS75  | 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          | 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 RADIUSSED 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     |



### 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



### 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       |



### 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               | Saddle Clip Spacer* |                 |          | 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.



### 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'.

# JOINTERS' TOOLS

## CABLE CORE TWISTERS

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



Complies with the Dielectric testing of IEC 60900-1

### 3 CORE

| Part No.  | Cores | Core Range Size mm <sup>2</sup> | 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      |

### 3 & 4 CORE

| Part No. | Cores | Core Range Size mm <sup>2</sup> | 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      |

### 4 CORE

| Part No. | Cores | Core Range Size mm <sup>2</sup>  | 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      |

## 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<br>Distance mm | Pack Qty | Weight g |
|----------|--------------------------------|----------|----------|
| 120-F    | 32 - 58                        | 10       | 44.1     |

### CABLE CORE GUARD

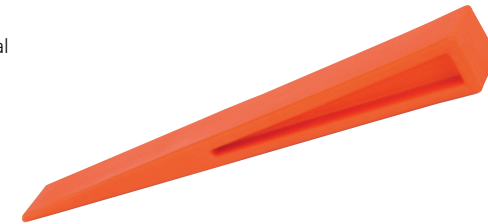
Manufactured in Nylon (International orange). Used to provide separation between a cable core which is being cut and neighbouring cores.



| 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       |

### 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.

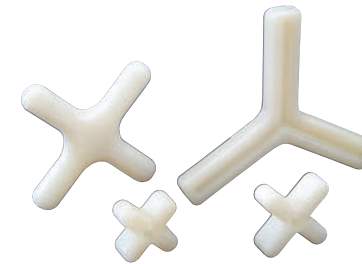


| Part No. | Nominal Lift mm | Pack Qty | Weight g |
|----------|-----------------|----------|----------|
| 120-CS   | 90              | 10       | 183      |

Complies with the Dielectric testing of IEC 60900-1

### CABLE CORE SPREADER

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



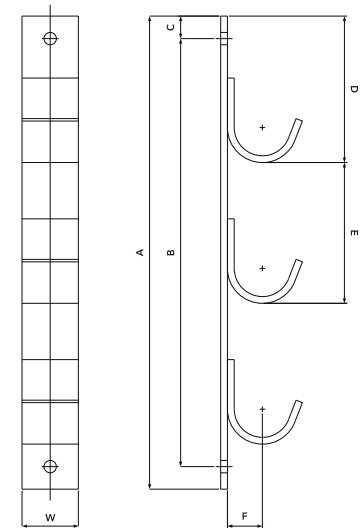
| Part No. | Core | Core Range Size mm <sup>2</sup> | Pack Qty | Weight g |
|----------|------|---------------------------------|----------|----------|
| 120-VNY  | 3    | 240 - 300                       | 100      | 45       |
| 120-WNY  | 3    | 185                             | 100      | 38       |
| 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<br>for cables<br>up to 50mm<br>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<br>for cables<br>51 - 75mm<br>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<br>for cables<br>76 - 100mm<br>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     |  |



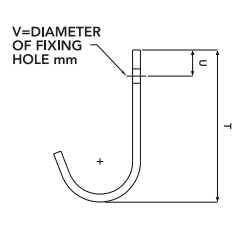


# SUSPENSION HOOKS

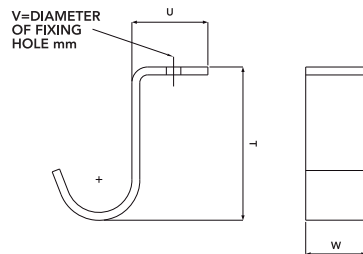
Manufactured in Mild Steel. Hot dipped galvanised after manufacture to BS EN ISO 1461:1999. Special designs available on request. Used to hang cables on walls and support structures.

## SUSPENSION HOOKS

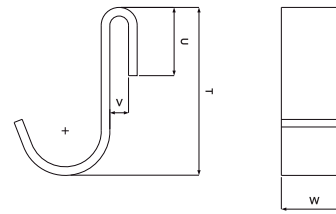
| Part No. | Max Cable Dia. | Dimensions mm |    |    | Material Size |           | Pack Qty | Weight g |        |
|----------|----------------|---------------|----|----|---------------|-----------|----------|----------|--------|
|          |                | T             | U  | V  | W             | 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



Type A



Type B



Type C

# ELLIS

Holding Power

## 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.



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.



Side Fix Vulcan is available as a special, with a side fixing for use when height is a limiting factor.

## 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

**BG Group's Queensland Curtis LNG – the first project in the world to convert natural gas from coal seams into LNG.** Photograph showing the construction of some 540km of main pipeline network linking the gas fields to the QCLNG terminal on Curtis Island. Ellis Emperor cable cleats were specified by Thiess Pty Ltd, due to the product's capability to withstand possible 111kA peak system faults. Furthermore, the Emperor's 316L stainless steel construction meant it is ideal for use in the harsh Australian conditions.



## 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 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.
- There shall be no cuts or damage visible to the outer sheath of the cable caused by the cleats or intermediate restraints.

IEC 61914 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:

$$F_t = \frac{0.17 \times i_p^2}{S}$$

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 four 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.

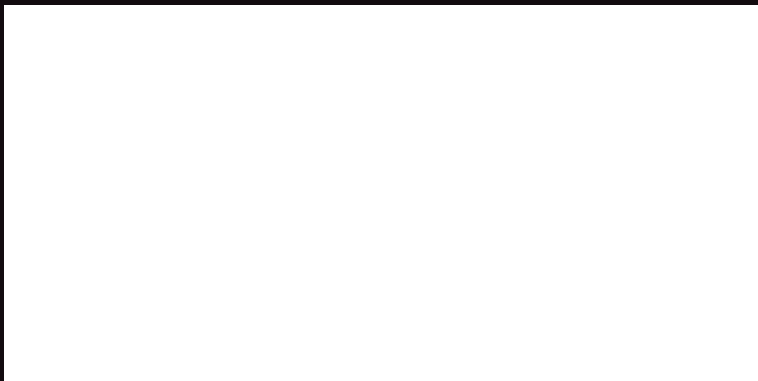


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