
+ Sta-Kon®
+ Color-Keyed®
+ Dragon Tooth®
+ Shield-Kon®
five

## 5. Termination systems






# Sta-Kon®
# Solderless crimp connectors to terminate cables

## 5. Termination systems

5.1

# Sta-Kon®

## Termination systems capabilities

With the Sta-Kon® range of solderless terminals, Thomas & Betts offer a complete termination system:

- Terminals for wires / cables from 0.25 to 150 mm²
- Insulated, non-insulated, disconnects and splices
- Copper lugs and compression connectors
- Standard and unique products for specific applications
- Products for harsh or ambient environments
- Low to high volume applications
- Complete range of tooling, from ergonomic hand tool to pneumatic and hydraulic power tools

Sta-Kon® terminals are available in insulated and non insulated versions (including copper tube terminals)

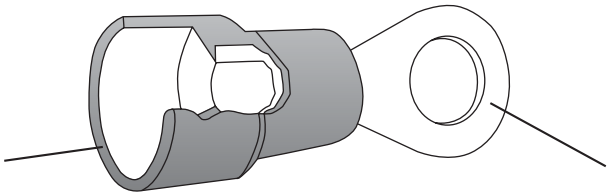
## Common features and benefits for the insulated and non-insulated versions

| Features | Benefits |
|---|---|
| High conductivity electrolytic copper | Superior conductivity and low contact resistance with a strong connection |
| Disconnects in brass with min. 70% copper | Improved mechanical properties (spring effect) |
| Electro-tin plating | Maximum corrosion resistance |
| The contact area on the terminal (e.g. in forks, rings,...) is harder than the crimp area | Better resistance to mechanical deformations |
| Brazed seam (*) | No barrel separation during crimping |
| Internal barrel serrations (with some terminals) | Better contact (low contact resistance) and improved mechanical properties (against vibration and pull out) |
| Size marking (with most terminals) | Easy identification of the terminal |
| Several styles:<br>• Rings for secure and reliable termination<br>• Forks: fast and easy to install, without removing the terminal screw<br>• Blades, pins and bootlace ferrules, for direct connection to terminal block<br>• Male and female disconnects (including fully insulated version and bullet shape), for easy connection and release<br>• Splices<br>• Terminal blocks and | To cover all types of application |
| Specifications | According to DIN specifications<br>MIL, UL, CSA approved terminals available upon request |
| Dedicated tooling range:<br>• crimp tools<br>• cable strippers and cutters | <br>• reliable and high quality crimps, for all kind of volumes<br>• standard, ergonomic and heavy duty ranges |

(*) Note: some non-insulated terminals have a copper tube construction, for maximum resistance against barrel opening during the crimp process

## Insulated terminals: specific features and benefits

Easy entry funnel design, for fast and secure insertion of the conductor




| Features | Benefits |
|---|---|
| Easy entry funnel design | Avoid wire hang up and allows fast and secure insertion of the conductor |
| Colour coded insulators, according to DIN cable sizes (cross-section):<br>• Green: 0.25 - 0.75 mm² (not DIN)<br>• Red: 0.5 - 1.5 mm²<br>• Blue: 1.5 - 2.5 mm²<br>• Yellow: 4.0 - 6.0 mm² | Instant identification and selection of the terminal |
| Brazed seam | No barrel separation during crimping |
| Internal barrel serrations (with some terminals) | Better contact (low contact resistance) and improved mechanical properties (against vibration and pull out) |
| Cable size and bolt size marking (on most terminals) | Easy identification of the terminal |
| Several insulation materials: | Temperature and flammability rating: |
| • PVC = Polyvinylchloride (Vinyl) | • PVC: +65°C / +75°C, UL 94 V-0<br>Economical yet premium quality, moisture resistant |
| • PA = Polyamide (Nylon) | • PA: +85°C / +105°C, UL 94 V-2<br>Ideal for harsh environments, excellent chemical, impact and abrasion resistance |
| • PC = Polycarbonate | • PC: +115°C / +125°C, UL 94 V-2<br>High temperature applications, excellent deformation characteristics |
| • Tefzel® (upon request) | • Tefzel®: +120°C / +150°C, UL 94 V-0<br>Top-of- the range material, for most demanding applications |
| Special styles:<br>• Quick splice<br>• Heat shrink splice<br>• Wire joints<br>• Terminal blocks | To cover specific applications |

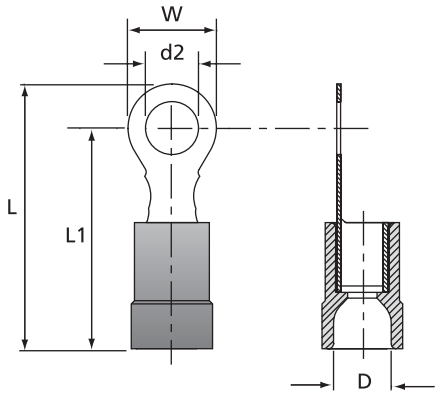
## Non-insulated terminals: specific features and benefits

| Features | Benefits |
|---|---|
| Dimensional specifications according to DIN 46235 and DIN 46234 | Standardised dimensioning |
| Cable size and bolt size marking on most terminals | Instant identification and selection of the terminal |
| Special styles:<br>• Copper tube ring terminals, for maximum resistance against barrel opening during the crimp process<br>• PCB terminals (DIN 46244), for screw mounting or soldering | To cover specific applications |

Tefzel® is a registered trademark of DuPont de Nemours

# Sta-Kon

## Polycarbonate insulated ring terminals




## Technical Information

| | |
|---|---|
| Material | Electrolytic copper |
| Plating | Tin plated |
| Marking | Wire size and bolt size stamped on the tongue |
| Metal barrel | Brazed seam to prevent barrel separation |
| Insulation | PC = Polycarbonate<br>High temperature applications, excellent deformation characteristics |
| Temperature resistance | +115°C / +125°C |
| Colour coding of the insulation | According to the wire size |
| Cable insertion | Easy entry |
| Flammability rating | UL 94 V-2 |

## Ordering Information

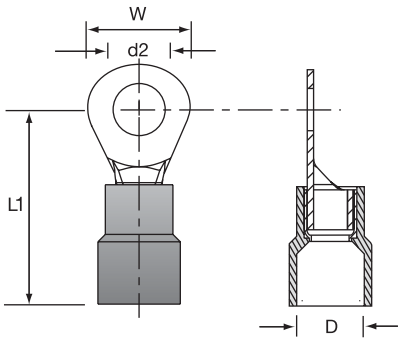
| Product Ref. | Wire size range | Colour | Stud hole size | Dimensions | | | | Weight | Quantity | Crimping tool* |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | d2 | W | L | D | L1 | | | |
| | [mm²] | | | [mm] | [mm] | [mm] | [mm] | [g/100] | [pieces] | |
| RZ 3 | 0.25 - 0.75 | Green | M 3 | 5.5 | 18.0 | 3.2 | 15.0 | 36 | 100 | |
| RZ 4 | 0.25 - 0.75 | Green | M 4 | 7.5 | 21.0 | 3.2 | 17.5 | 45 | 100 | ERG2510 |
| RZ 5 | 0.25 - 0.75 | Green | M 5 | 9.0 | 22.0 | 3.2 | 17.5 | 51 | 100 | |
| RA3RR | 0.5 - 1.5 | Red | M 3 | 5.5 | 19.0 | 4.0 | 16.0 | 60 | 100 | |
| RA4RR | 0.5 - 1.5 | Red | M 4 | 7.0 | 20.5 | 4.0 | 17.0 | 71 | 100 | |
| RA5RR | 0.5 - 1.5 | Red | M 5 | 9.0 | 22.5 | 4.0 | 18.0 | 79 | 100 | |
| RA6RR | 0.5 - 1.5 | Red | M 6 | 11.0 | 26.5 | 4.0 | 21.0 | 96 | 100 | |
| RB 3 | 1.5 - 2.5 | Blue | M 3 | 5.5 | 19.0 | 4.5 | 16.0 | 75 | 100 | |
| RB 4-EU | 1.5 - 2.5 | Blue | M 4 | 7.0 | 20.5 | 4.5 | 17.0 | 92 | 100 | ERG2000KE |
| RB 5 | 1.5 - 2.5 | Blue | M 5 | 9.0 | 22.5 | 4.5 | 18.0 | 96 | 100 | ERG2001A |
| RB 6 | 1.5 - 2.5 | Blue | M 6 | 11.0 | 26.5 | 4.5 | 21.0 | 117 | 100 | WT2124Y |
| RB 8 | 1.5 - 2.5 | Blue | M 8 | 14.0 | 27.5 | 4.5 | 21.0 | 141 | 100 | |
| RC 4 | 4.0 - 6.0 | Yellow | M 4 | 8.0 | 24.0 | 6.4 | 20.5 | 158 | 50 | |
| RC 5 | 4.0 - 6.0 | Yellow | M 5 | 9.0 | 25.0 | 6.4 | 20.5 | 166 | 50 | |
| RC 6-EU | 4.0 - 6.0 | Yellow | M 6 | 11.0 | 28.5 | 6.4 | 23.0 | 179 | 50 | |
| RC 8 | 4.0 - 6.0 | Yellow | M 8 | 14.0 | 31.0 | 6.4 | 24.0 | 220 | 50 | |
| RC 10 E | 4.0 - 6.0 | Yellow | M 10 | 17.0 | 34.0 | 6.4 | 25.5 | 245 | 50 | |

* Use selection chart to determine die set (see page 333)

See pages 327 to 333 for tooling specifications

# Sta-Kon

## Nylon insulated ring terminals DIN 46237




## Technical Information

| | |
|---|---|
| Material | Copper |
| Plating | Tin plated |
| Marking | Wire size and bolt size stamped on the tongue |
| Metal barrel | Brazed seam to prevent barrel separation |
| Insulation | PA = Polyamide<br>Ideal for harsh environments, excellent chemical, impact and abrasion resistance |
| Temperature resistance | +85°C / +105°C |
| Colour coding of the insulation | According to the wire size |
| Flammability rating | UL 94 V-2 |

## Ordering Information

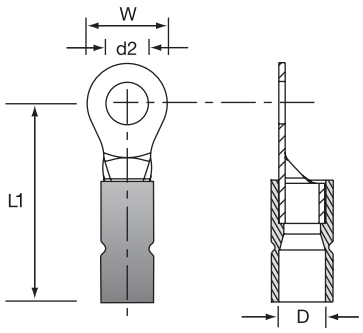
| Product Ref. | Wire size range [mm²] | Colour | Stud hole size d2 | Dimensions W [mm] | Dimensions L1 [mm] | Dimensions D [mm] | Weight [g/100] | Quantity [pieces] | Crimping tool* |
|---|---|---|---|---|---|---|---|---|---|
| TRA 3 | 0.5 - 1.5 | Red | M 3 | 5.5 | 17.5 | 4.0 | 70 | 100 | |
| TRA 35 | 0.5 - 1.5 | Red | M 3.5 | 6.6 | 20.4 | 4.0 | 67 | 100 | |
| TRA 4 | 0.5 - 1.5 | Red | M 4 | 8.0 | 21.8 | 4.0 | 76 | 100 | |
| TRA 5 | 0.5 - 1.5 | Red | M 5 | 8.0 | 21.8 | 4.0 | 79 | 100 | |
| TRA 6 | 0.5 - 1.5 | Red | M 6 | 11.6 | 27.5 | 4.0 | 108 | 100 | |
| TRA 8 | 0.5 - 1.5 | Red | M 8 | 11.6 | 27.5 | 4.0 | 134 | 100 | |
| TRB 3 | 1.5 - 2.5 | Blue | M 3 | 6.0 | 20.6 | 4.5 | 79 | 100 | |
| TRB 35 | 1.5 - 2.5 | Blue | M 3.5 | 8.5 | 23.0 | 4.5 | 76 | 100 | ERG2000KE |
| TRB 4 | 1.5 - 2.5 | Blue | M 4 | 8.5 | 23.0 | 4.5 | 79 | 100 | ERG2001A |
| TRB 5 | 1.5 - 2.5 | Blue | M 5 | 9.5 | 22.9 | 4.5 | 89 | 100 | WT2124Y |
| TRB 6 | 1.5 - 2.5 | Blue | M 6 | 12.0 | 28.0 | 4.5 | 117 | 100 | |
| TRB 8 | 1.5 - 2.5 | Blue | M 8 | 12.0 | 28.0 | 4.5 | 148 | 100 | |
| TRB 10 | 1.5 - 2.5 | Blue | M 10 | 13.6 | 31.7 | 4.5 | 204 | 100 | |
| TRC 4-EU | 4.0 - 6.0 | Yellow | M 4 | 7.4 | 26.7 | 6.4 | 158 | 100 | |
| TRC 5-EU | 4.0 - 6.0 | Yellow | M 5 | 9.5 | 26.7 | 6.4 | 175 | 100 | |
| TRC 6-EU | 4.0 - 6.0 | Yellow | M 6 | 12.0 | 32.7 | 6.4 | 187 | 100 | |
| TRC 8 | 4.0 - 6.0 | Yellow | M 8 | 15.0 | 34.9 | 6.4 | 230 | 100 | |
| TRC 10 | 4.0 - 6.0 | Yellow | M 10 | 15.0 | 34.9 | 6.4 | 296 | 100 | |

* Use selection chart to determine die set (see page 333)

See pages 327 to 333 for tooling specifications

# Sta-Kon

## Vinyl insulated ring terminals DIN 46237




## Technical Information

| | |
|---|---|
| Material | Copper |
| Plating | Tin plated |
| Marking | Wire size and bolt size stamped on the tongue |
| Metal barrel | Brazed seam to prevent barrel separation |
| Insulation | PVC = Polyvinylchloride (Vinyl) Economical yet premium quality, moisture resistant |
| Max. electrical rating | +75°C 600 Volts max |
| Colour coding of the insulation | According to the wire size |
| Cable insertion | Easy entry |
| Flammability rating | UL 94 V-0 |

## Ordering Information

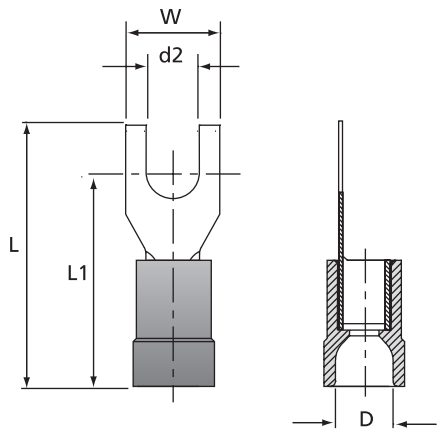
| Product Ref. | Wire size range [mm²] | Colour | Stud hole size d2 | W [mm] | Dimensions L1 [mm] | D [mm] | Weight [g/100] | Quantity [pieces] | Crimping tool* |
|---|---|---|---|---|---|---|---|---|---|
| VB-3RR | 0.5 - 1.5 | Red | M 3 | 6.0 | 17.2 | 4.0 | 68 | 100 | |
| VB-35RR | 0.5 - 1.5 | Red | M 3.5 | 6.0 | 17.2 | 4.0 | 69 | 100 | |
| VB-4RR | 0.5 - 1.5 | Red | M 4 | 8.0 | 18.2 | 4.0 | 73 | 100 | |
| VB-5RR | 0.5 - 1.5 | Red | M 5 | 10.0 | 19.2 | 4.0 | 92 | 100 | |
| VB-6RR | 0.5 - 1.5 | Red | M 6 | 10.0 | 19.2 | 4.0 | 87 | 100 | |
| VB-8RR | 0.5 - 1.5 | Red | M 8 | 14.0 | 23.2 | 4.0 | 139 | 100 | |
| VB-10RR | 0.5 - 1.5 | Red | M 10 | 14.0 | 23.2 | 4.0 | 100 | 100 | |
| VB-3BR | 1.5 - 2.5 | Blue | M 3 | 6.0 | 17.5 | 4.5 | 80 | 100 | ERG2000KE |
| VB-35BR | 1.5 - 2.5 | Blue | M 3.5 | 6.0 | 17.5 | 4.5 | 94 | 100 | ERG2001A |
| VB-4BR | 1.5 - 2.5 | Blue | M 4 | 8.0 | 18.5 | 4.5 | 83 | 100 | WT2124Y |
| VB-5BR | 1.5 - 2.5 | Blue | M 5 | 10.0 | 20.5 | 4.5 | 110 | 100 | |
| VB-6BR | 1.5 - 2.5 | Blue | M 6 | 11.0 | 22.5 | 4.5 | 122 | 100 | |
| VB-8BR | 1.5 - 2.5 | Blue | M 8 | 14.0 | 23.5 | 4.5 | 146 | 100 | |
| VB-10BR | 1.5 - 2.5 | Blue | M 10 | 15.0 | 23.5 | 4.5 | 204 | 100 | |
| VB-4YR | 4.0 - 6.0 | Yellow | M 4 | 8.0 | 22.1 | 6.3 | 167 | 100 | |
| VB-5YR | 4.0 - 6.0 | Yellow | M 5 | 10.0 | 23.1 | 6.3 | 196 | 100 | |
| VB-6YR | 4.0 - 6.0 | Yellow | M 6 | 11.0 | 24.1 | 6.3 | 195 | 100 | |
| VB-8YR | 4.0 - 6.0 | Yellow | M 8 | 14.0 | 27.1 | 6.3 | 250 | 100 | |
| VB-10YR | 4.0 - 6.0 | Yellow | M 10 | 18.0 | 29.1 | 6.3 | 305 | 100 | |

* Use selection chart to determine die set (see page 333)

See pages 327 to 333 for tooling specifications

# Sta-Kon

## Polycarbonate insulated fork terminals




## Technical Information

| | |
|---|---|
| Material | Electrolytic copper |
| Plating | Tin plated |
| Marking | Wire size and bolt size stamped on the tongue |
| Metal barrel | Brazed seam to prevent barrel separation |
| Insulation | PC = Polycarbonate<br>High temperature applications, excellent deformation characteristics |
| Temperature resistance | +115°C / +125°C |
| Colour coding of the insulation | According to the wire size |
| Cable insertion | Easy entry |
| Flammability rating | UL 94 V-2 |

## Ordering Information

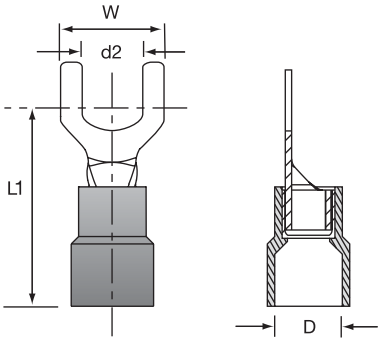
| Product Ref. | Wire size range | Colour | Stud hole size | Dimensions | | | | Weight | Quantity | Crimping tool* |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | d2 | W | L | D | L1 | | | |
| | [mm²] | | | [mm] | [mm] | [mm] | [mm] | [g/100] | [pieces] | |
| RZ 3F | 0.25 - 0.75 | Green | M 3 | 5.5 | 18.0 | 3.2 | 15.0 | 41 | 100 | ERG 2510 |
| RZ 4F | 0.25 - 0.75 | Green | M 4 | 7.5 | 21.0 | 3.2 | 17.5 | 41 | 100 | |
| RA 35F | 0.5 - 1.5 | Red | M 3.5 | 5.5 | 21.0 | 4.0 | 17.5 | 62 | 100 | |
| RA 4F | 0.5 - 1.5 | Red | M 4 | 7.0 | 20.5 | 4.0 | 17.0 | 64 | 100 | |
| RA 5F | 0.5 - 1.5 | Red | M 5 | 9.0 | 22.5 | 4.0 | 18.0 | 75 | 100 | |
| RA 6F | 0.5 - 1.5 | Red | M 6 | 11.0 | 26.5 | 4.0 | 21.0 | 90 | 100 | |
| RB 3F | 1.5 - 2.5 | Blue | M 3 | 5.5 | 19.0 | 4.5 | 16.0 | 72 | 100 | |
| RB 4F | 1.5 - 2.5 | Blue | M 4 | 7.0 | 20.5 | 4.5 | 17.0 | 84 | 100 | ERG2000KE |
| RB 5F | 1.5 - 2.5 | Blue | M 5 | 9.0 | 22.5 | 4.5 | 18.0 | 96 | 100 | ERG2001A |
| RB 6F | 1.5 - 2.5 | Blue | M 6 | 11.0 | 26.5 | 4.5 | 21.0 | 113 | 100 | WT2124Y |
| RC 4F | 4.0 - 6.0 | Yellow | M 4 | 8.0 | 24.0 | 6.4 | 20.5 | 159 | 50 | |
| RC 5F | 4.0 - 6.0 | Yellow | M 5 | 9.0 | 25.0 | 6.4 | 20.5 | 161 | 50 | |
| RC 6F | 4.0 - 6.0 | Yellow | M 6 | 11.0 | 28.5 | 6.4 | 23.0 | 174 | 50 | |
| RC 8F | 4.0 - 6.0 | Yellow | M 8 | 14.0 | 31.0 | 6.4 | 24.0 | 207 | 50 | |
| RC 10F | 4.0 - 6.0 | Yellow | M 10 | 18.0 | 36.0 | 6.4 | 27.0 | 280 | 50 | |

* Use selection chart to determine die set (see page 333)

See pages 327 to 333 for tooling specifications

# Sta-Kon

## Nylon insulated fork terminals DIN 46237




## Technical Information

| | |
|---|---|
| Material | Copper |
| Plating | Tin plated |
| Marking | Wire size and bolt size stamped on the tongue |
| Metal barrel | Brazed seam to prevent barrel separation |
| Insulation | PA = Polyamide<br>Ideal for harsh environments, excellent chemical, impact and abrasion resistance |
| Temperature resistance | +85°C / +105°C |
| Colour coding of the insulation | According to the wire size (DIN) |
| Cable insertion | Easy entry |
| Flammability rating | UL 94 V-2 |

## Ordering Information

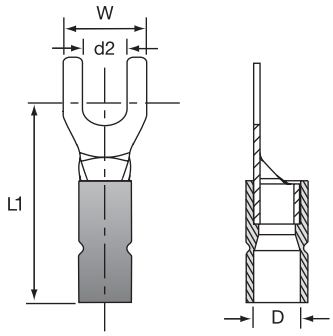
| Product Ref. | Wire size range [mm²] | Colour | Stud hole size d2 | Dimensions W [mm] | L1 [mm] | D [mm] | Weight [g/100] | Quantity [pieces] | Crimping tool* |
|---|---|---|---|---|---|---|---|---|---|
| TRA 3F | 0.5 - 1.5 | Red | M 3 | 5.7 | 22.0 | 4.0 | 65 | 100 | |
| TRA 35F | 0.5 - 1.5 | Red | M 3.5 | 6.2 | 22.0 | 4.0 | 62 | 100 | |
| TRA 4F | 0.5 - 1.5 | Red | M 4 | 7.2 | 22.0 | 4.0 | 70 | 100 | |
| TRA 5F | 0.5 - 1.5 | Red | M 5 | 8.0 | 22.0 | 4.0 | 92 | 100 | |
| TRA 6F | 0.5 - 1.5 | Red | M 6 | 10.8 | 23.0 | 4.0 | 102 | 100 | ERG2000KE |
| TRB 3F | 1.5 - 2.5 | Blue | M 3 | 5.7 | 22.2 | 4.5 | 81 | 100 | ERG2001A |
| TRB 35F | 1.5 - 2.5 | Blue | M 3.5 | 6.2 | 22.2 | 4.5 | 74 | 100 | WT2124Y |
| TRB 4F | 1.5 - 2.5 | Blue | M 4 | 7.2 | 22.2 | 4.5 | 80 | 100 | |
| TRB 5F | 1.5 - 2.5 | Blue | M 5 | 8.0 | 22.2 | 4.5 | 110 | 100 | |
| TRB 6F | 1.5 - 2.5 | Blue | M 6 | 10.8 | 23.5 | 4.5 | 122 | 100 | |
| TRC 4F | 4.0 - 6.0 | Yellow | M 4 | 8.2 | 26.7 | 6.4 | 163 | 100 | |
| TRC 5F | 4.0 - 6.0 | Yellow | M 5 | 9.0 | 26.7 | 6.4 | 182 | 100 | |
| TRC 6F | 4.0 - 6.0 | Yellow | M 6 | 12.0 | 30.3 | 6.4 | 190 | 100 | |

* Use selection chart to determine die set (see page 333)

See pages 327 to 333 for tooling specifications

# Sta-Kon

## Vinyl insulated fork terminals DIN 46237




## Technical Information

| | |
|---|---|
| Material | Copper |
| Plating | Tin plated |
| Marking | Wire size and bolt size stamped on the tongue |
| Metal barrel | Brazed seam to prevent barrel separation |
| Insulation | PVC = Polyvinylchloride (Vinyl) Economical yet premium quality, moisture resistant |
| Max. electrical rating | +75°C 600 Volts |
| Colour coding of the insulation | According to the wire size |
| Cable insertion | Easy entry |
| Flammability rating | UL 94 V-0 |

## Ordering Information

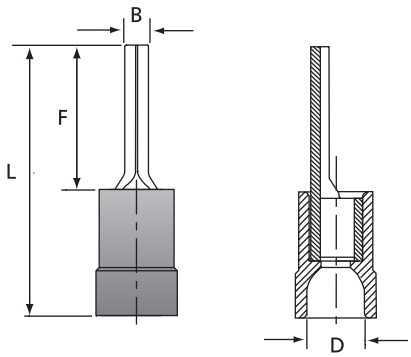
| Product Ref. | Wire size range [mm²] | Colour | Stud hole size d2 | Dimensions W [mm] | Dimensions L1 [mm] | Dimensions D [mm] | Weight [g/100] | Quantity [pieces] | Crimping tool* |
|---|---|---|---|---|---|---|---|---|---|
| VB-3RF | 0.5 - 1.5 | Red | M 3 | 6.0 | 17.2 | 4.0 | 68 | 100 | |
| VB-35RF | 0.5 - 1.5 | Red | M 3.5 | 6.0 | 17.2 | 4.0 | 68 | 100 | |
| VB-4RF | 0.5 - 1.5 | Red | M 4 | 6.8 | 18.2 | 4.0 | 73 | 100 | |
| VB-5RF | 0.5 - 1.5 | Red | M 5 | 10.0 | 19.2 | 4.0 | 92 | 100 | |
| VB-6RF | 0.5 - 1.5 | Red | M 6 | 11.0 | 21.2 | 4.0 | 103 | 100 | |
| VB-3BF | 1.5 - 2.5 | Blue | M 3 | 5.5 | 19.5 | 4.5 | 90 | 100 | ERG2000KE |
| VB-35BF | 1.5 - 2.5 | Blue | M 3.5 | 6.0 | 17.5 | 4.5 | 97 | 100 | ERG2001A |
| VB-4BF | 1.5 - 2.5 | Blue | M 4 | 6.8 | 19.2 | 4.5 | 83 | 100 | WT2124Y |
| VB-5BF | 1.5 - 2.5 | Blue | M 5 | 10.0 | 20.5 | 4.5 | 110 | 100 | |
| VB-6BF | 1.5 - 2.5 | Blue | M 6 | 11.0 | 22.5 | 4.5 | 121 | 100 | |
| VB-4YF | 4.0 - 6.0 | Yellow | M 4 | 8.0 | 22.1 | 6.3 | 169 | 100 | |
| VB-5YF | 4.0 - 6.0 | Yellow | M 5 | 10.0 | 23.1 | 6.3 | 189 | 100 | |
| VB-6YF | 4.0 - 6.0 | Yellow | M 6 | 11.0 | 24.1 | 6.3 | 200 | 100 | |
| VB-8YF | 4.0 - 6.0 | Yellow | M 8 | 14.0 | 27.1 | 6.3 | 235 | 100 | |
| VB-10YF | 4.0 - 6.0 | Yellow | M 10 | 18.0 | 29.1 | 6.3 | 305 | 100 | |

* Use selection chart to determine die set (see page 333)

See pages 327 to 333 for tooling specifications

# Sta-Kon

## Polycarbonate insulated pin terminals DIN 46231




## Technical Information

| | |
|---|---|
| Material | Electrolytic copper |
| Plating | Tin plated |
| Metal barrel | Brazed seam to prevent barrel separation |
| Insulation | PC = Polycarbonate<br>High temperature applications, excellent deformation characteristics |
| Temperature resistance | +115°C / +125°C |
| Colour coding of the insulation | According to the wire size |
| Cable insertion | Easy entry |
| Flammability rating | UL 94 V-2 |

## Ordering Information

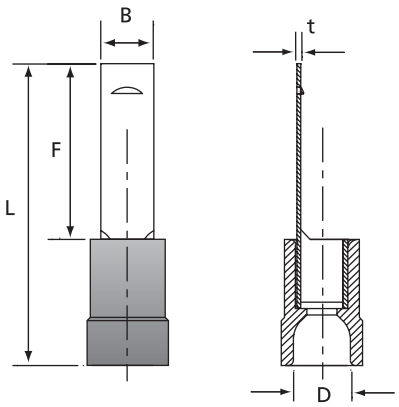
| Product Ref. | Wire size range | Colour | Dimensions | | | | Weight | Quantity | Crimping tool* |
|---|---|---|---|---|---|---|---|---|---|
| | | | L | F | B | D | | | |
| | [mm²] | | [mm] | [mm] | [mm] | [mm] | [g/100] | [pieces] | |
| RZ P | 0.25 - 0.75 | Green | 22.0 | 12.0 | 1.8 | 3.2 | 47 | 100 | ERG2510 |
| RA P | 0.5 - 1.5 | Red | 22.0 | 12.0 | 1.9 | 4.0 | 67 | 100 | ERG2000KE |
| RB P | 1.5 - 2.5 | Blue | 22.0 | 12.0 | 1.9 | 4.5 | 80 | 100 | ERG2001A |
| RC P | 4.0 - 6.0 | Yellow | 27.0 | 14.0 | 2.8 | 6.4 | 175 | 50 | WT2124Y |

* Use selection chart to determine die set (see page 333)

See pages 327 to 333 for tooling specifications

# Sta-Kon

## Polycarbonate insulated blade terminals DIN 46231




## Technical Information

| | |
|---|---|
| Material | Electrolytic copper |
| Plating | Tin plated |
| Marking | Wire size stamped on the tongue |
| Metal barrel | Brazed seam to prevent barrel separation |
| Insulation | PC = Polycarbonate<br>High temperature applications, excellent deformation characteristics |
| Temperature resistance | +115°C / +125°C |
| Colour coding of the insulation | According to the wire size (DIN) |
| Cable insertion | Easy entry |
| Flammability rating | UL 94 V-2 |

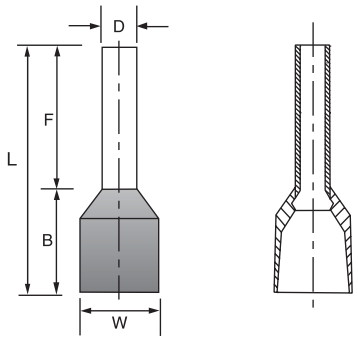
## Ordering Information

| Product Ref. | Wire size range | Colour | Dimensions | | | | | Weight | Quantity | Crimping tool* |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | L | F | B | t | D | | | |
| | [mm²] | | [mm] | [mm] | [mm] | [mm] | [mm] | [g/100] | [pieces] | |
| RZ PP | 0.25 - 0.75 | Green | 20.0 | 10.0 | 2.5 | 0.5 | 3.2 | 39 | 100 | ERG2510 |
| RA PP** | 0.5 - 1.5 | Red | 22.0 | 11.5 | 2.9 | 0.7 | 4.5 | 60 | 100 | ERG2000KE |
| RB PP** | 1.5 - 2.5 | Blue | 22.0 | 11.5 | 2.9 | 0.7 | 4.5 | 78 | 100 | ERG2001A |
| RC PP*** | 4.0 - 6.0 | Yellow | 27.0 | 13.0 | 4.0 | 1.0 | 6.7 | 120 | 100 | WT2124Y |

* Use selection chart to determine appropriate die set (see page 333)
** With locking tab
*** Product Ref. RCPP: PVC insulation and no easy entry
See pages 327 to 333 for tooling specifications

# Sta-Kon

## Nylon insulated bootlace ferrules




## Technical Information

| | |
|---|---|
| Material | Copper |
| Plating | Tin plated |
| Metal barrel | Copper tube |
| Insulation | PA = Polyamide<br>Ideal for harsh environments, excellent chemical, impact and abrasion resistance |
| Electrical rating | +105°C / 300 Volts max |
| Colour coding of the insulation | According to the wire size and the country standard<br>F=France, D=DIN, G=Germany |
| Flammability rating | UL 94 V-2 |

## Ordering Information

| Product Ref. | Wire size | French colour* | German colour* | Din colour* | Dimensions F | L | W | B | D | Weight | Quantity | Crimping tool** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | [mm²] | | | | [mm] | [mm] | [mm] | [mm] | [mm] | [g/100] | [pieces] | |
| N-0306C* | 0.30 | Pink | Turquoise | NA | 6.0 | 10.4 | 1.9 | 1.1 | 4.4 | 4.2 | 1000 | TBZ3 |
| N-0308C* | 0.30 | Pink | Turquoise | NA | 8.0 | 12.4 | 1.9 | 4.4 | 1.1 | 4.9 | 1000 | |
| N-0508C* | 0.50 | White | Orange | White | 8.0 | 14.0 | 2.6 | 6.0 | 1.3 | 8.1 | 1000 | |
| N-0510C* | 0.50 | White | Orange | White | 10.0 | 16.0 | 2.6 | 6.0 | 1.3 | 8.5 | 1000 | |
| N-7508C* | 0.75 | Blue | White | Grey | 8.0 | 14.3 | 2.8 | 6.3 | 1.5 | 9.0 | 1000 | |
| N-7512C* | 0.75 | Blue | White | Grey | 12.0 | 18.3 | 2.8 | 6.3 | 1.5 | 12.0 | 1000 | |
| N-1008C* | 1.00 | Red | Yellow | Red | 8.0 | 14.3 | 3.0 | 6.3 | 1.7 | 10.0 | 1000 | |
| N-1012C* | 1.00 | Red | Yellow | Red | 12.0 | 18.3 | 3.0 | 6.3 | 1.7 | 14.0 | 1000 | |
| N-1508C* | 1.50 | Black | Red | Black | 8.0 | 14.3 | 3.5 | 6.3 | 2.0 | 12.0 | 1000 | |
| N-1510C* | 1.50 | Black | Red | Black | 10.0 | 16.36 | 3.5 | 6.3 | 2.0 | 13.0 | 1000 | ERG2000KE |
| N-1518C* | 1.50 | Black | Red | Black | 18.0 | 24.3 | 3.5 | 6.3 | 2.0 | 19.0 | 1000 | ERG2106 |
| N-2508C* | 2.50 | Grey | Blue | Blue | 8.0 | 15.4 | 4.0 | 7.4 | 2.6 | 19.0 | 1000 | TBZ3 |
| N-2512C* | 2.50 | Grey | Blue | Blue | 12.0 | 19.4 | 4.0 | 7.4 | 2.6 | 21.0 | 1000 | |
| N-2518C* | 2.50 | Grey | Blue | Blue | 18.0 | 25.4 | 4.0 | 7.4 | 2.6 | 27.0 | 1000 | |
| N-4010C* | 4.00 | Orange | Grey | Grey | 10.0 | 17.4 | 4.5 | 7.4 | 3.2 | 28.0 | 1000 | |
| N-4012C* | 4.00 | Orange | Grey | Grey | 12.0 | 19.4 | 4.5 | 7.4 | 3.2 | 31.0 | 1000 | |
| N-4018C* | 4.00 | Orange | Grey | Grey | 18.0 | 25.4 | 4.5 | 7.4 | 3.2 | 42.0 | 1000 | |
| N-6012C* | 6.00 | Green | Black | Yellow | 12.0 | 20.5 | 6.0 | 8.5 | 3.9 | 45.0 | 1000 | |
| N-6018C* | 6.00 | Green | Black | Yellow | 18.0 | 26.5 | 6.0 | 8.5 | 3.9 | 57.0 | 1000 | |
| N-10012C* | 10.00 | Brown | Ivory | Red | 12.0 | 20.8 | 7.5 | 8.8 | 4.9 | 59.0 | 1000 | |
| N-10018C* | 10.00 | Brown | Ivory | Red | 18.0 | 26.8 | 7.5 | 8.8 | 4.9 | 76.0 | 1000 | |
| N-16012C* | 16.00 | White | Green | Blue | 12.0 | 22.0 | 8.7 | 10.0 | 6.2 | 68.0 | 500 | |
| N-16018C* | 16.00 | White | Green | Blue | 18.0 | 28.0 | 8.7 | 10.0 | 6.2 | 103.0 | 500 | |
| N-25016C* | 25.00 | Black | Brown | Yellow | 16.0 | 28.0 | 11.0 | 12.0 | 7.9 | 126.0 | 500 | |
| N-25022C* | 25.00 | Black | Brown | Yellow | 22.0 | 34.0 | 11.0 | 12.0 | 7.9 | 154.0 | 250 | ERG2000KE |
| N-35016C* | 35.00 | Red | Beige | Red | 16.0 | 30.0 | 12.5 | 14.0 | 8.7 | 164.0 | 200 | |
| N-35025C* | 35.00 | Red | Beige | Red | 25.0 | 39.0 | 12.5 | 14.0 | 8.7 | 202.0 | 200 | |
| N-50020C* | 50.00 | Blue | Olive | Blue | 20.0 | 36.0 | 15.0 | 16.0 | 10.9 | 311.0 | 100 | |
| N-50025C* | 50.00 | Blue | Olive | Blue | 25.0 | 41.0 | 15.0 | 16.0 | 10.9 | 361.0 | 100 | |

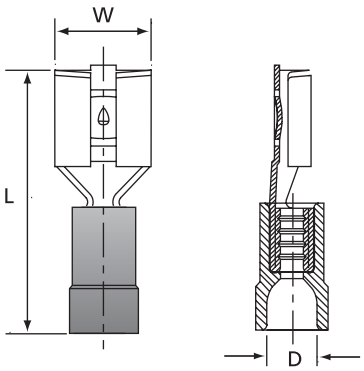
* For French Colour codes please add suffix “F” e.g. N-0508CF, for German Colour codes please add suffix “G” e.g. N-0508CG, for Din Colour codes add suffix ”D” e.g. N-0508CD.

** Use selection chart to determine appropriate die set (see page 333)

See pages 327 to 333 for tooling specifications

# Sta-Kon

## Insulated female disconnects DIN 46245




## Technical Information

| | |
|---|---|
| Material | Brass with 70% copper |
| Plating | Tin plated |
| Metal barrel | Brazed seam to prevent barrel separation |
| Insulation | PC = Polycarbonate<br>High temperature applications, excellent deformation characteristics |
| Temperature resistance | +115°C / +125°C<br>(For PVC insulation +65°C / +75°C) |
| Colour coding of the insulation | According to the wire size (DIN) |
| Cable insertion | Easy entry |
| Flammability rating | UL 94 V-2 |

## Ordering Information

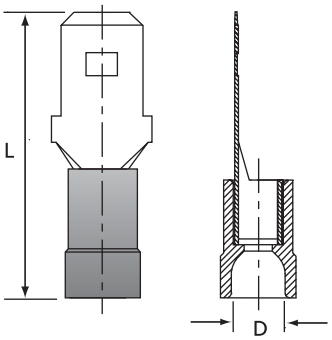
| Product Ref. | Wire size range [mm²] | For male tab size [mm] | Colour | Dimensions L [mm] | D [mm] | W [mm] | Weight [g/100] | Quantity [pieces] | Crimping tool* |
|---|---|---|---|---|---|---|---|---|---|
| RA 28 | 0.5 - 1.5 | 2.8 x 0.8 | Red | 18.5 | 3.3 | 3.5 | 60 | 100 | |
| RA 29 | 0.5 - 1.5 | 2.8 x 0.5 | Red | 18.5 | 3.3 | 3.5 | 60 | 100 | |
| RA 48** | 0.5 - 1.5 | 4.8 x 0.8 | Red | 19.0 | 3.7 | 5.7 | 82 | 100 | |
| RA 49** | 0.5 - 1.5 | 4.8 x 0.5 | Red | 19.0 | 3.7 | 5.7 | 83 | 100 | |
| RA 63 | 0.5 - 1.5 | 6.3 x 0.8 | Red | 20.0 | 4.0 | 7.6 | 96 | 100 | ERG2000KE |
| RB 48** | 1.5 - 2.5 | 4.8 x 0.5 | Blue | 19.0 | 4.4 | 5.7 | 91 | 100 | ERG2001A |
| RB 49** | 1.5 - 2.5 | 4.8 x 0.8 | Blue | 19.0 | 4.4 | 5.7 | 87 | 100 | WT2124Y |
| RB 63 | 1.5 - 2.5 | 6.3 x 0.8 | Blue | 20.0 | 4.5 | 7.6 | 106 | 100 | |
| RC 63 | 4.0 - 6.0 | 6.3 x 0.8 | Yellow | 24.0 | 6.4 | 7.6 | 183 | 50 | |
| RC 95** | 4.0 - 6.0 | 9.5 x 1.2 | Yellow | 31.0 | 6.2 | 11.0 | 233 | 50 | |

* Use selection chart to determine the appropriate die set (see page 333)

** Non-brazed with support sleeve and PVC insulation, not easy entry

See pages 327 to 333 for tooling specifications

# Insulated male disconnects DIN 46245




## Technical Information

| | |
|---|---|
| Material | Brass with 70% copper |
| Plating | Tin plated |
| Metal barrel | Brazed seam to prevent barrel separation |
| Insulation | PC = Polycarbonate<br>High temperature applications, excellent deformation characteristics |
| Temperature resistance | +115°C / +125°C<br>(For PVC insulation +65°C / +75°C) |
| Colour coding of the insulation | According to the wire size (DIN) |
| Cable insertion | Easy entry |
| Flammability rating | UL 94 V-2 |

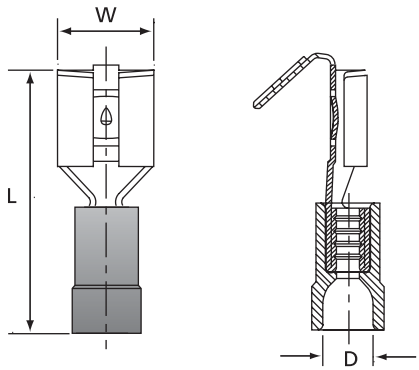
## Ordering Information

| Product Ref. | Wire size range [mm²] | Male tab size [mm x mm] | Colour | Dimensions [mm] L | Dimensions [mm] D | Weight [g/100] | Quantity [pieces] | Crimping tool* |
|---|---|---|---|---|---|---|---|---|
| RA 63M | 0.5 - 1.5 | 6.3 x 0.8 | Red | 22.0 | 4.0 | 107 | 100 | ERG2000KE |
| RB 63M | 1.5 - 2.5 | 6.3 x 0.8 | Blue | 22.0 | 4.5 | 107 | 100 | ERG2001A |
| RC 63M** | 4.0 - 6.0 | 6.3 x 0.8 | Yellow | 25.0 | 6.3 | 155 | 50 | WT2124Y |

** PVC insulation. no easy entry and non brazed, with brass support sleeve
* Use selection chart to determine appropriate die set (see page 333)

See pages 327 to 333 for tooling specifications

# Insulated piggy back disconnects DIN 46245




## Technical Information

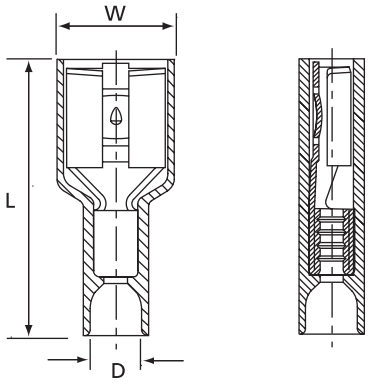
| | |
|---|---|
| Material | Brass with 70% copper |
| Plating | Tin plated |
| Metal barrel | Non brazed, with brass support sleeve |
| Insulation | PVC<br>Economical yet premium quality, moisture resistant |
| Temperature resistance | +65°C / +75°C |
| Colour coding of the insulation | According to the wire size (DIN) |
| Flammability rating | UL 94 V-0 |

## Ordering Information

| Product Ref. | Wire size range [mm²] | For tab size [mm x mm] | Colour | Dimensions [mm] L | Dimensions [mm] D | Dimensions [mm] W | Weight [g/100] | Quantity [pieces] | Crimping tool* |
|---|---|---|---|---|---|---|---|---|---|
| RA 63T | 0.5 - 1.5 | 6.3 x 0.8 | Red | 22.0 | 3.7 | 7.4 | 135 | 100 | ERG2000KE |
| RB 63T | 1.5 - 2.5 | 6.3 x 0.8 | Blue | 22.0 | 4.3 | 7.5 | 146 | 100 | ERG2001A, WT2124Y |

* Use selection chart to determine appropriate die set (see page 333)

See pages 327 to 333 for tooling specifications




## Technical Information

| | |
|---|---|
| Material | Brass with 70% copper |
| Plating | Tin plated |
| Metal barrel | Non brazed, with brass support sleeve |
| Insulation | PA = Polyamide<br>Ideal for harsh environments, excellent chemical, impact and abrasion resistance |
| Temperature resistance | +85°C / +105°C |
| Colour coding of the insulation | According to the wire size (DIN) |
| Flammability rating | UL 94 V-2 |

## Ordering Information

| Product Ref. | Wire size range [mm²] | For male tab size [mm x mm] | Colour | Dimensions W [mm] | L [mm] | D [mm] | Weight [g/100] | Quantity [pieces] | Crimping tool* |
|---|---|---|---|---|---|---|---|---|---|
| RA 28V | 0.5 - 1.5 | 2.8 x 0.8 | Red | 5.0 | 19.3 | 3.8 | 110 | 100 | |
| RA 29V | 0.5 - 1.5 | 2.8 x 0.5 | Red | 5.0 | 19.3 | 3.8 | 110 | 100 | |
| RA 48V | 0.5 - 1.5 | 4.8 x 0.8 | Red | 7.4 | 20.2 | 3.6 | 115 | 100 | |
| RA 49V | 0.5 - 1.5 | 4.8 x 0.5 | Red | 7.4 | 20.2 | 3.6 | 115 | 100 | ERG2000KE |
| RA 63V** | 0.5 - 1.5 | 6.3 x 0.8 | Red | 8.8 | 21.0 | 4.0 | 123 | 100 | ERG2001A |
| RB 48V | 1.5 - 2.5 | 4.8 x 0.8 | Blue | 7.1 | 19.5 | 3.9 | 120 | 100 | WT2124Y |
| RB 49V | 1.5 - 2.5 | 4.8 x 0.5 | Blue | 7.1 | 19.5 | 3.9 | 120 | 100 | |
| RB 63V** | 1.5 - 2.5 | 6.3 x 0.8 | Blue | 8.8 | 21.0 | 4.5 | 132 | 100 | |
| RC 63V | 4.0 - 6.0 | 6.3 x 0.8 | Yellow | 9.0 | 26.0 | 5.3 | 215 | 50 | |

* Use selection chart to determine appropriate die set (see page 333)

** Easy entry and brazed barrel, polycarbonate insulator

See pages 327 to 333 for tooling specifications

# Sta-Kon

## Insulated sectional terminal block (6 male tabs)

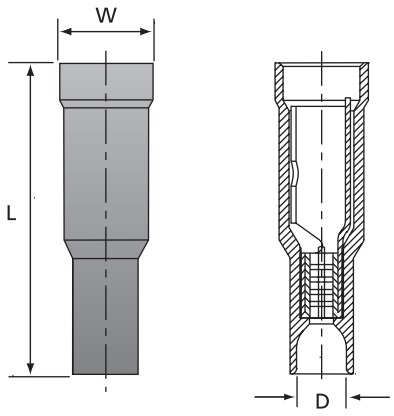
### Technical Information

| | |
|---|---|
| Material | Brass |
| Plating | Tin plated |
| Insulation | PA = Polyamide<br>Ideal for harsh environments, provides excellent chemical, impact and abrasion resistance |
| Colour | Black |
| Temperature resistance | +105°C |
| Voltage | 250V |
| Flammability rating | UL 94 V-2 |

### Ordering Information

| Product Ref. | Tab size [mm x mm] | Mounting method | Weight [g/100] | Quantity [pieces] |
|---|---|---|---|---|
| MTB1-TB | 6 male tabs 6.3 x 0.8 | M4 fillister head screw | 798 | 100 |

## Fully insulated bullet female receptacles




### Technical Information

| | |
|---|---|
| Material RAB<br>Material RB5B | Phosphor bronze<br>Brass |
| Plating | Tin plated |
| Metal barrel: RAB<br>Metal barrel: RB5B | Brazed seam to prevent barrel separation<br>Non brazed, with brass support sleeve |
| Insulation RAB<br>Insulation RB5B | Polycarbonate<br>PVC |
| Colour coding of the insulation | According to the wire size (DIN) |
| Cable insertion | Easy entry for RAB |

### Ordering Information

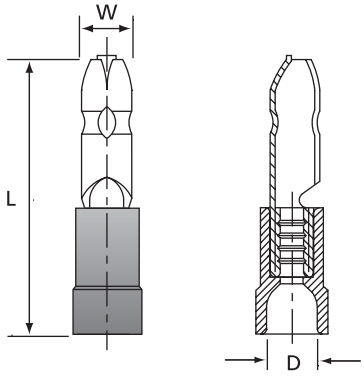
| Product Ref. | Wire size range [mm²] | Colour | Dimensions W [mm] | L [mm] | D [mm] | Weight [g/100] | Quantity [pieces] | Crimping tool* |
|---|---|---|---|---|---|---|---|---|
| RAB | 0.5 - 1.5 | Red | 3.9 | 25.0 | 4.0 | 115 | 100 | ERG2000KE |
| RB5B | 1.5 - 2.5 | Blue | 4.9 | 26.0 | 4.3 | 144 | 100 | ERG2001A, WT2124Y |

* Use selection chart to determine appropriate die set (see page 333)

See pages 327 to 333 for tooling specifications

# Sta-Kon

## Insulated bullet male disconnects




## Technical Information

| | |
|---|---|
| Material | Brass |
| Plating | Tin plated |
| Metal barrel | Brazed seam to prevent barrel separation |
| Insulation | RABM - Polycarbonate<br>RB5BM - PVC |
| Temperature resistance | RABM: +115°C / +125°C<br>RB5M: +65°C / +75°C |
| Colour coding of the insulation | According to the wire size (DIN) |
| Cable insertion | Easy entry except of RB5BM |
| Flammability rating | PVC: UL 94 V-0<br>PC: UL 94 V-2 |

## Ordering Information

| Product Ref. | Wire size range | Colour | Dimensions | | | Weight | Quantity | Crimping tool* |
|---|---|---|---|---|---|---|---|---|
| | | | W | L | D | | | |
| | [mm²] | | [mm] | [mm] | [mm] | [g/100] | [pieces] | |
| RABM | 0.5 - 1.5 | Red | 4.0 | 22.0 | 4.0 | 102 | 100 | ERG2000KE |
| RB5BM** | 1.5 - 2.5 | Blue | 5.0 | 20.0 | 4.3 | 109 | 100 | ERG2001A, WT2124Y |

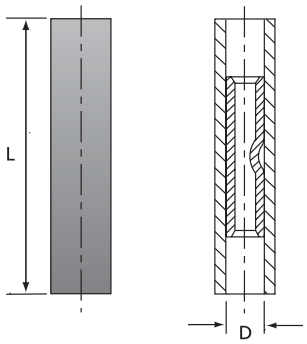
* Use selection chart to determine appropriate die set (see page 333)

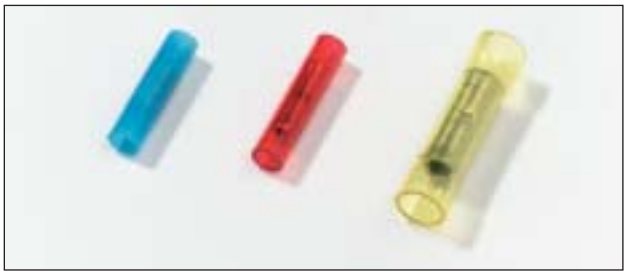
** non brazed, with brass support sleeve

See pages 327 to 333 for tooling specifications

# Sta-Kon

## Fully insulated butt splices



### Technical Information

| | |
|---|---|
| Material | Electrolytic copper |
| Plating | Tin plated |
| Metal barrel | Brazed seam to prevent barrel separation |
| Insulation | PC = Polycarbonate |
| Temperature resistance | +115°C / +125°C |
| Colour coding of the insulation | According to the wire size (DIN) |
| Cable insertion | Easy entry |
| Flammability rating | UL 94 V-2 |

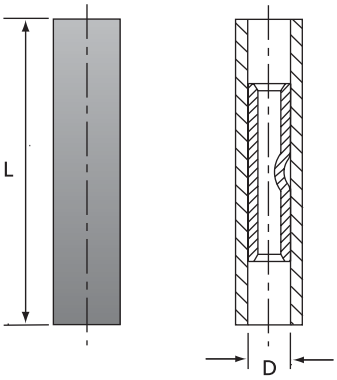
### Ordering Information

| Product Ref. | Wire size range [mm²] | Colour | Dimensions L [mm] | Dimensions D [mm] | Weight [g/100] | Quantity [pieces] | Crimping tool* |
|---|---|---|---|---|---|---|---|
| RAA15 | 0.5 - 1.5 | Red | 24.0 | 3.4 | 97 | 100 | ERG2000KE |
| RBB25-EU | 1.5 - 2.5 | Blue | 26.0 | 4.3 | 150 | 100 | ERG2001A |
| RCC6 | 4.0 - 6.0 | Yellow | 33.0 | 6.5 | 316 | 50 | WT2124Y |

* Use selection chart to determine appropriate die set (see page 333)

See pages 327 to 333 for tooling specifications

## Insulated heat shrink butt splices




### Technical Information

| | |
|---|---|
| Material | Electrolytic copper |
| Plating | Tin plated |
| Metal barrel | Brazed seam to prevent barrel separation |
| Insulation | Halogen free heat shrink insulation material |
| Colour coding of the insulation | According to the wire size (DIN) |
| Cable insertion | Easy entry |
| Other properties | Halogen free<br>Waterproof after application (heat shrink) |

### Ordering Information

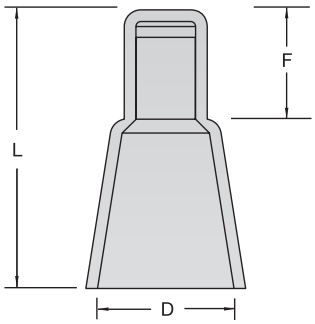
| Product Ref. | Wire size range [mm²] | Colour | Dimensions L [mm] | Dimensions D [mm] | Weight [g/100] | Quantity [pieces] | Crimping tool* |
|---|---|---|---|---|---|---|---|
| RAA15SI | 0.5 - 1.5 | Red | 35.0 | 4.5 | 100 | 25 | ERG2000KE |
| RBB25SI | 1.5 - 2.5 | Blue | 35.0 | 5.4 | 150 | 25 | ERG2001A |
| RCC6SI | 4.0 - 6.0 | Yellow | 40.0 | 6.8 | 320 | 25 | WT2124Y |

* Use selection chart to determine appropriate die set (see page 333)

See pages 327 to 333 for tooling specifications

Requires a hot air tool for heat-shrinkage (see Shrink-Kon® section)

## Insulated wire joints




### Technical Information

| | |
|---|---|
| Material | Brass |
| Plating | Tin plated |
| Metal barrel | Brazed seam to prevent barrel separation |
| Insulation | PA = Polyamide<br>Ideal for harsh environments, provides excellent chemical, impact and abrasion resistance |
| Temperature resistance | +85°C / +105°C |
| Flammability rating | UL 94 V-2 |

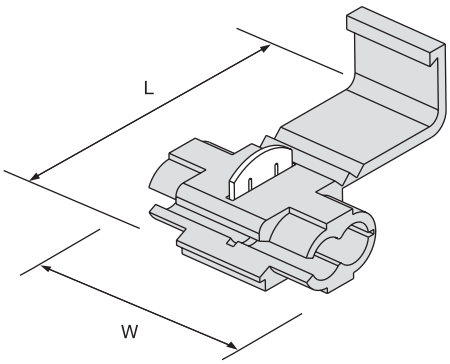
### Ordering Information

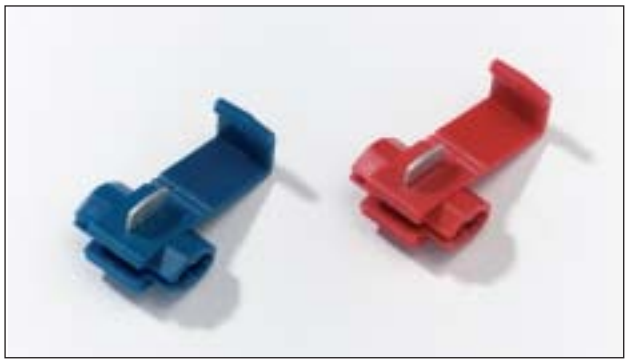
| Product Ref. | Wire size range [mm²] | Colour | Dimensions F [mm] | L [mm] | D [mm] | Weight [g/100] | Quantity [pieces] | Crimping tool* |
|---|---|---|---|---|---|---|---|---|
| RBJ | 1.0 - 3.0 | White | 8.0 | 15.2 | 6.4 | 86 | 100 | ERG2000KE, ERG2001A |
| RCJ | 2.0 - 6.0 | White | 9.0 | 17.7 | 9.2 | 166 | 50 | WT2124Y |

* Use selection chart to determine appropriate die set (see page 333)

See pages 327 to 333 for tooling specifications

## Insulated quick splice



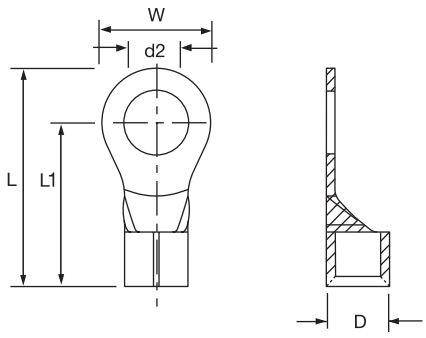
### Technical Information

| | |
|---|---|
| Material | Brass |
| Insulation | P.P. = Polypropylene |
| Max. electrical rating | +105°C / 600V |
| Colour coding of the insulation | According to the wire size (DIN) |

### Ordering Information

| Product Ref. | Wire size range [mm²] | Colour | Dimensions L [mm] | W [mm] | Quantity [pieces] |
|---|---|---|---|---|---|
| TRAWT | 0.5 - 1.5 | Red | 20.0 | 27.0 | 100 |
| TRBWT | 1.5 - 2.5 | Blue | 20.0 | 27.0 | 100 |

# Non-insulated ring terminals




## Technical Information

| | |
|---|---|
| Material | Electrolytic copper for very good conductivity |
| Plating | Electro-tin plating, excellent corrosion resistance |
| Metal barrel | Brazed seam to prevent barrel separation |
| Current rating | 0.5-1.5 mm² = 12 Ampere<br>1.5-2.5 mm² = 27 Ampere<br>4.0-6.0 mm² = 37 Ampere |
| Marking | Diameter and bolt size |
| Cable insertion | Easy entry (chamfered entry edges) |

## Approvals

E9809

## Ordering Information

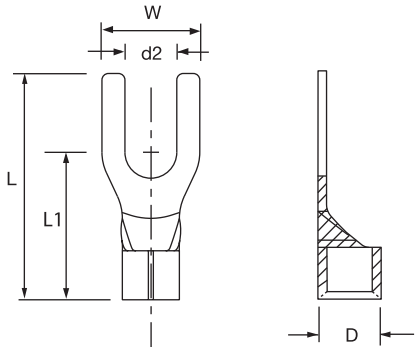
| Product Ref. | Wire size range | Stud size | Dimensions | | | | Weight | Quantity | Crimping tool* |
|---|---|---|---|---|---|---|---|---|---|
| | | d2 | W | L | D | L1 | | | |
| | [mm²] | | [mm] | [mm] | [mm] | [mm] | [g/100] | [pieces] | |
| K18-6R-M | 0.5 - 1.5 | M 3.5 | 6.6 | 14.4 | 3.4 | 11.1 | 64 | 1000 | |
| K18-8R-M | 0.5 - 1.5 | M 4 | 6.6 | 14.4 | 3.4 | 11.1 | 61 | 1000 | |
| K18-10R-M | 0.5 - 1.5 | M 5 | 8.0 | 15.8 | 3.4 | 11.8 | 66 | 1000 | |
| K18-14R-M | 0.5 - 1.5 | M 6 | 11.6 | 21.8 | 3.4 | 15.8 | 99 | 1000 | |
| K18-516R-M | 0.5 - 1.5 | M 8 | 11.6 | 21.8 | 3.4 | 15.8 | 85 | 1000 | |
| K14-6R-M | 1.5 - 2.5 | M 3.5 | 6.6 | 14.4 | 4.1 | 11.1 | 81 | 1000 | |
| K14-8R-M | 1.5 - 2.5 | M 4 | 6.6 | 14.4 | 4.1 | 11.1 | 71 | 1000 | |
| K14-10R-M | 1.5 - 2.5 | M 5 | 8.5 | 16.8 | 4.1 | 12.6 | 87 | 1000 | |
| K14-14R-M | 1.5 - 2.5 | M 6 | 12.0 | 21.8 | 4.1 | 15.8 | 118 | 1000 | ERG2002E |
| K14-516R-M | 1.5 - 2.5 | M 8 | 12.0 | 21.8 | 4.1 | 15.8 | 110 | 1000 | ERG2000KE |
| K14-38R-M | 1.5 - 2.5 | M 10 | 13.6 | 25.5 | 4.1 | 18.7 | 114 | 1000 | |
| K10-6R-M | 4.0 - 6.0 | M 3.5 | 7.2 | 15.7 | 5.6 | 12.1 | 128 | 1000 | |
| K10-8R-M | 4.0 - 6.0 | M 4 | 7.2 | 15.7 | 5.6 | 12.1 | 123 | 1000 | |
| K10-10R-M | 4.0 - 6.0 | M 5 | 9.5 | 19.6 | 5.6 | 15.1 | 155 | 1000 | |
| K10-14R-M | 4.0 - 6.0 | M 6 | 12.0 | 22.5 | 5.6 | 16.5 | 192 | 1000 | |
| K10-516R-M | 4.0 - 6.0 | M 8 | 15.0 | 27.0 | 5.6 | 19.5 | 242 | 1000 | |
| K10-38R-M | 4.0 - 6.0 | M 10 | 15.0 | 27.0 | 5.6 | 19.5 | 207 | 1000 | |
| K10-12R-D | 4.0 - 6.0 | M 12 | 19.2 | 31.6 | 5.6 | 22.0 | 299 | 500 | |

* Use selection chart to determine appropriate die set (see page 333)

See pages 327 to 333 for tooling specifications

# Sta-Kon

## Non-insulated fork terminals




## Technical Information

| | |
|---|---|
| Material | Electrolytic copper for very good conductivity |
| Plating | Electro-tin plating, excellent corrosion resistance |
| Metal barrel | Brazed seam to prevent barrel separation |
| Current rating | 0.5-1.5 $mm^2$ = 12 Ampere<br>1.5-2.5 $mm^2$ = 27 Ampere<br>4.0-6.0 $mm^2$ = 37 Ampere |
| Marking | Diameter and bolt size |
| Cable insertion | Easy entry (chamfered entry edges) |

## Approvals

UL®

E9809

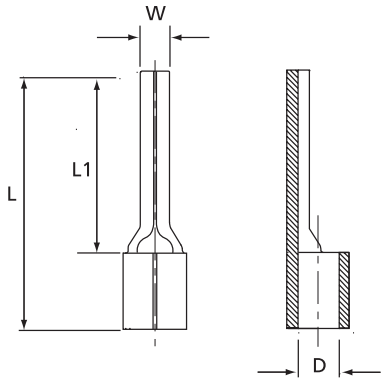
## Ordering Information

| Product Ref. | Wire size range | Stud size | Dimensions | | | | Weight | Quantity | Crimping tool* |
|---|---|---|---|---|---|---|---|---|---|
| | | d2 | W | L | D | L1 | | | |
| | [$mm^2$] | | [mm] | [mm] | [mm] | [mm] | [g/100] | [pieces] | |
| K18-6F-M | 0.5 - 1.5 | M 3.5 | 5.7 | 16.0 | 3.4 | 11.3 | 66 | 1000 | |
| K18-8F-M | 0.5 - 1.5 | M 4 | 6.4 | 16.0 | 3.4 | 11.3 | 65 | 1000 | |
| K18-10F-M | 0.5 - 1.5 | M 5 | 8.1 | 16.0 | 3.4 | 11.3 | 67 | 1000 | |
| K14-6F-M | 1.5 - 2.5 | M 3.5 | 6.0 | 16.0 | 4.1 | 11.3 | 75 | 1000 | |
| K14-8F-M | 1.5 - 2.5 | M 4 | 6.4 | 16.0 | 4.1 | 11.3 | 75 | 1000 | ERG2002E |
| K14-10F-M | 1.5 - 2.5 | M 5 | 8.1 | 16.0 | 4.1 | 11.3 | 81 | 1000 | ERG2000KE |
| K10-6F-M | 4.0 - 6.0 | M 3.5 | 7.2 | 17.4 | 5.6 | 13.5 | 140 | 1000 | |
| K10-8F-M | 4.0 - 6.0 | M 4 | 9.0 | 18.5 | 5.6 | 13.0 | 146 | 1000 | |
| K10-10F-M | 4.0 - 6.0 | M 5 | 9.0 | 18.5 | 5.6 | 13.0 | 142 | 1000 | |
| K10-14F-M | 4.0 - 6.0 | M 6 | 9.0 | 18.5 | 5.6 | 13.0 | 143 | 1000 | |

* Use selection chart to determine appropriate die set (see page 333)

See pages 327 to 333 for tooling specifications

# Non-insulated pin terminal DIN 46230




## Technical Information

| | |
|---|---|
| Material | Electrolytic copper |
| Plating | Tin plated |

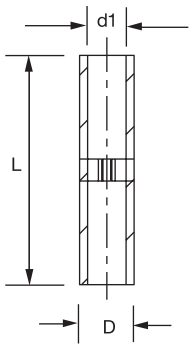
## Ordering Information

| Product Ref. | Wire size range | Dimensions | | | | Weight | Quantity | Crimping tool* |
|---|---|---|---|---|---|---|---|---|
| | | L | L1 | D | W | | | |
| | [mm²] | [mm] | [mm] | [mm] | [mm] | [g/100] | [pieces] | |
| B6P | 4.0 - 6.0 | 20.0 | 14.0 | 3.4 | 2.8 | 160 | 100 | ERG2002E, ERG2000KE |

* Use selection chart to determine appropriate die set (see page 333)

See pages 327 to 333 for tooling specifications

# Non-insulated butt splices




## Approvals

E9809

## Technical Information

| | |
|---|---|
| Material | Copper |
| Plating | Tin plated |
| Metal barrel | Tubular construction |
| Cable insertion | Easy entry |

## Ordering Information

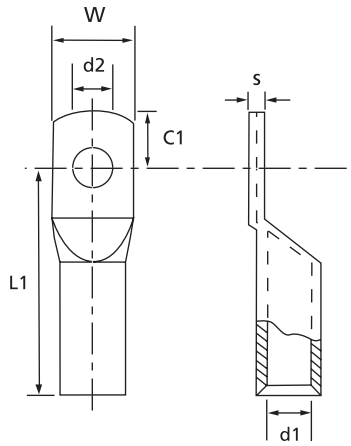
| Product Ref. | Wire size range | Dimensions | | | Weight | Quantity | Crimping tool* |
|---|---|---|---|---|---|---|---|
| | | d1 | L | D | | | |
| | [mm²] | [mm] | [mm] | [mm] | [g/100] | [pieces] | |
| K18-BS-M | 0.5 - 1.5 | 1.7 | 15.0 | 3.3 | 94 | 1000 | ERG2002E ERG2000KE |
| K14-BS-M | 1.5 - 2.5 | 2.3 | 15.0 | 3.9 | 112 | 1000 | |
| K10-BS-M | 4.0 - 6.0 | 3.5 | 15.0 | 5.4 | 183 | 1000 | |

* Use selection chart to determine appropriate die set (see page 333)

See pages 327 to 333 for tooling specifications

# Sta-Kon

## Non-insulated copper tube ring terminals DIN 46235




## Technical Information

| | |
|---|---|
| Material | Electrolytic copper |
| Plating | Tin plated |
| Metal barrel | Copper tube |
| Marking | Cable cross-section area and bolt size |
| Cable insertion | Easy entry |

## Ordering Information

| Product Ref. | Wire size [mm²] | Stud size | Dimensions L1 [mm] | C1 [mm] | W [mm] | s [mm] | d1 [mm] | d2 [mm] | Weight [kg/100] | Quantity [pieces] | Crimping tool* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| T 2.5-4** | 2.5 | M 4 | 13.0 | 4.0 | 7.5 | 1.2 | 2.3 | 4.3 | 0.14 | 100 | |
| T 4-6** | 4.0 | M 6 | 19.0 | 6.5 | 10.0 | 1.2 | 3.0 | 6.5 | 0.21 | 100 | ERG 2002E |
| T 6-5 | 6.0 | M 5 | 24.0 | 6.5 | 8.5 | 1.5 | 3.8 | 5.3 | 0.34 | 100 | WT 3165B |
| T 6-6 | 6.0 | M 6 | 24.0 | 7.5 | 8.5 | 1.5 | 3.8 | 6.4 | 0.35 | 100 | |
| T 10-6 | 10.0 | M 6 | 27.0 | 7.5 | 9.0 | 1.5 | 4.5 | 6.4 | 0.40 | 100 | |
| T 10-8 | 10.0 | M 8 | 27.0 | 10.0 | 13.0 | 1.3 | 4.5 | 8.4 | 0.41 | 100 | ERG 1016 |
| T 16-6 | 16.0 | M 6 | 36.0 | 7.5 | 13.0 | 2.5 | 5.5 | 6.4 | 1.50 | 100 | WT 3165B |
| T 16-8 | 16.0 | M 8 | 36.0 | 10.0 | 13.0 | 2.5 | 5.5 | 8.4 | 1.50 | 100 | WTH 500 (+Dies) |
| T 16-10 | 16.0 | M 10 | 36.0 | 12.0 | 17.0 | 2.5 | 5.5 | 10.5 | 1.50 | 100 | |
| T 25-6 | 25.0 | M 6 | 38.0 | 7.5 | 14.0 | 3.0 | 7.0 | 6.4 | 2.20 | 100 | |
| T 25-8 | 25.0 | M 8 | 38.0 | 10.0 | 16.0 | 3.0 | 7.0 | 8.4 | 2.20 | 100 | |
| T 25-10 | 25.0 | M 10 | 38.0 | 12.0 | 17.0 | 3.0 | 7.0 | 10.5 | 2.20 | 100 | |
| T 25-12 | 25.0 | M 12 | 38.0 | 13.0 | 19.0 | 3.0 | 7.0 | 13.5 | 2.20 | 100 | |
| T 35-8 | 35.0 | M 8 | 42.0 | 10.0 | 17.0 | 3.5 | 8.2 | 8.4 | 3.50 | 100 | WT 3165B |
| T 35-10 | 35.0 | M 10 | 42.0 | 12.0 | 19.0 | 3.5 | 8.2 | 10.5 | 3.50 | 100 | WTH 500 (+Dies) |
| T 50-8 | 50.0 | M 8 | 52.0 | 10.0 | 20.0 | 4.0 | 10.0 | 10.5 | 4.40 | 100 | |
| T 50-10 | 50.0 | M 10 | 52.0 | 12.0 | 19.0 | 3.5 | 10.0 | 10.5 | 4.40 | 100 | |
| T 70-10 | 70.0 | M 10 | 55.0 | 12.0 | 24.0 | 4.5 | 11.5 | 10.5 | 6.20 | 50 | |
| T 95-10 | 95.0 | M 10 | 65.0 | 12.0 | 28.0 | 5.0 | 13.5 | 10.5 | 8.70 | 25 | |
| T 120-10 | 120.0 | M 10 | 70.0 | 15.0 | 32.0 | 5.5 | 15.5 | 10.5 | 10.00 | 25 | WT 3014E (+Dies) |
| T 150-12 | 150.0 | M 12 | 78.0 | 15.0 | 34.0 | 6.0 | 17.0 | 10.5 | 12.00 | 100 | |

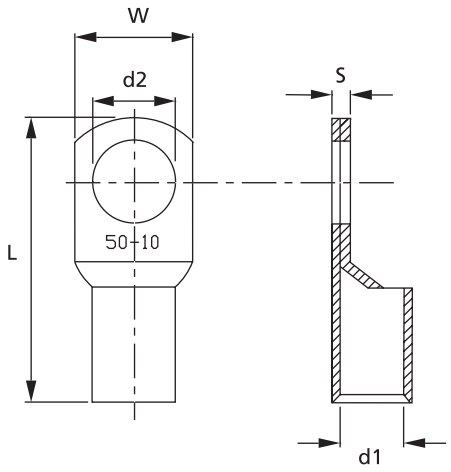
* Use selection chart to determine appropriate die set (see page 333)

** Not according to DIN Ring form with inspection hole

See pages 327 to 333 for tooling specifications

# Sta-Kon

## Non-insulated copper tube ring terminals with inspection window




## Technical Information

| | |
|---|---|
| Material | Electrolytic copper |
| Plating | Tin plated |
| Metal barrel | Copper tube with inspection window (hole) |
| Current rating | See table |
| Marking | Cable size (cross-section area) and bolt size |
| Cable insertion | Easy entry |

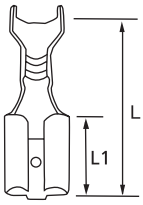
## Ordering Information

| Product Ref. | Wire size [mm²] | Stud size | Dimensions L [mm] | W [mm] | s [mm] | d1 [mm] | d2 [mm] | Current rating [Ampere] | Weight [kg/100] | Quantity [pieces] | Crimping tool* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| TW 10-6 | 10 | M6 | 27.0 | 12.6 | 0.85 | 4.5 | 6.5 | 90 | 0.29 | 100 | ERG 1016 |
| TW 10-8 | 10 | M8 | 27.0 | 12.6 | 0.85 | 4.5 | 8.4 | 90 | 0.27 | 100 | WT 3165B |
| TW 16-6 | 16 | M6 | 29.5 | 12.6 | 0.85 | 5.5 | 6.5 | 125 | 0.38 | 100 | WTH 500 (+ Dies) |
| TW 16-8 | 16 | M8 | 29.5 | 12.6 | 0.85 | 5.5 | 8.4 | 125 | 0.36 | 100 | |
| TW 25-6 | 25 | M6 | 33.0 | 15.0 | 1.0 | 7.0 | 6.5 | 160 | 0.68 | 100 | |
| TW 25-8 | 25 | M8 | 33.0 | 15.0 | 1.0 | 7.0 | 8.4 | 160 | 0.63 | 100 | |
| TW 25-10 | 25 | M10 | 33.0 | 15.0 | 1.0 | 7.0 | 10.5 | 160 | 0.59 | 100 | |
| TW 35-6 | 35 | M6 | 38.0 | 15.2 | 2.5 | 8.2 | 6.5 | 200 | 1.14 | 100 | |
| TW 35-8 | 35 | M8 | 38.0 | 15.2 | 2.5 | 8.2 | 8.4 | 200 | 1.03 | 100 | |
| TW 35-10 | 35 | M10 | 38.0 | 15.2 | 2.5 | 8.2 | 10.5 | 200 | 1.00 | 100 | |
| TW 50-8 | 50 | M8 | 44.5 | 18.5 | 2.9 | 10.0 | 8.4 | 250 | 1.86 | 100 | WT 3165B |
| TW 50-10 | 50 | M10 | 44.5 | 18.5 | 2.9 | 10.0 | 10.5 | 250 | 1.77 | 100 | WTH 500 (+ Dies) |
| TW 50-12 | 50 | M12 | 44.5 | 18.5 | 2.9 | 10.0 | 13.0 | 250 | 1.71 | 100 | |
| TW 70-8 | 70 | M8 | 54.2 | 21.4 | 3.5 | 11.5 | 8.4 | 310 | 3.18 | 50 | |
| TW 70-10 | 70 | M10 | 54.2 | 21.4 | 3.5 | 11.5 | 10.5 | 310 | 3.08 | 50 | |
| TW 70-12 | 70 | M12 | 54.2 | 21.4 | 3.5 | 11.5 | 13.0 | 310 | 2.94 | 50 | |
| TW 95-10 | 95 | M10 | 59.0 | 25.5 | 3.9 | 13.5 | 10.5 | 380 | 4.42 | 50 | |
| TW 95-12 | 95 | M12 | 59.0 | 25.5 | 3.9 | 13.5 | 13.0 | 380 | 4.26 | 50 | |
| TW 120-10 | 120 | M10 | 66.7 | 28.3 | 4.5 | 15.5 | 10.5 | 440 | 6.83 | 25 | |
| TW 120-12 | 120 | M12 | 66.7 | 28.3 | 4.5 | 15.5 | 13.0 | 380 | 6.36 | 25 | |
| TW 120-14 | 120 | M14 | 66.7 | 28.3 | 4.5 | 15.5 | 15.0 | 380 | 5.93 | 25 | |
| TW 120-16 | 120 | M16 | 66.7 | 28.3 | 4.5 | 15.5 | 17.0 | 380 | 5.52 | 25 | WT 3014E (+ Dies) |
| TW 150-12 | 150 | M12 | 74.5 | 31.0 | 4.7 | 17.0 | 13.0 | 510 | 8.34 | 25 | |
| TW 150-14 | 150 | M14 | 74.5 | 31.0 | 4.7 | 17.0 | 15.0 | 510 | 8.48 | 25 | |
| TW 150-16 | 150 | M16 | 74.5 | 31.0 | 4.7 | 17.0 | 17.0 | 510 | 8.34 | 25 | |

* Use selection chart to determine appropriate die set (see page 333)
See pages 327 to 333 for tooling specifications

Other sizes available upon request - please contact your Sales Office

## Non-insulated female disconnect terminals




### Technical Information

| | |
|---|---|
| Material | Brass with 70% copper |
| Plating | Tin plated |
| Temperature rating | +110°C |

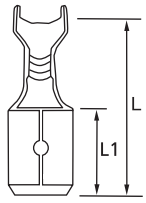
### Ordering Information

| Product Ref. | Wire size range [mm²] | Male tab size [mm] | Dimensions [mm] L | L1 | Weight [g/100] | Quantity [pieces] | Crimping tool* |
|---|---|---|---|---|---|---|---|
| BA 285 | 0.5 - 1.0 | 2.8 x 0.5 | 12.7 | 5.0 | 21 | 100 | |
| BA 288 | 0.5 - 1.0 | 2.8 x 0.8 | 12.7 | 5.0 | 25 | 100 | |
| BA 485 | 0.75 - 1.5 | 4.8 x 0.5 | 16.0 | 6.4 | 47 | 100 | |
| BA 488 | 0.75 - 1.5 | 4.8 x 0.8 | 16.0 | 6.4 | 47 | 100 | ERG 0560 |
| BA 638 | 0.75 - 1.5 | 6.3 x 0.8 | 19.0 | 7.6 | 77 | 100 | |
| BB 638 | 1.5 - 2.5 | 6.3 x 0.8 | 19.0 | 7.6 | 80 | 100 | |
| BC 638 | 4.0 - 6.0 | 6.3 x 0.8 | 19.0 | 7.6 | 86 | 100 | |

* Use selection chart to determine appropriate die set (see page 333)

See pages 327 to 333 for tooling specifications

## Non-insulated male disconnect terminals




### Technical Information

| | |
|---|---|
| Material | Brass with 70% copper |
| Plating | Tin plated |
| Temperature | +110°C |

### Ordering Information

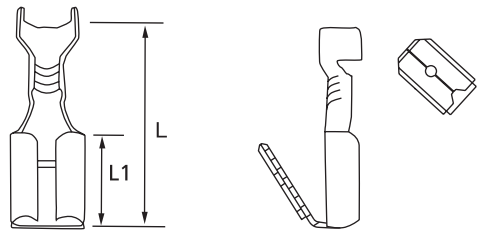
| Product Ref. | Wire size range [mm²] | Male tab size [mm] | Dimensions [mm] L | L1 | Weight [g/100] | Quantity [pieces] | Crimping tool* |
|---|---|---|---|---|---|---|---|
| BA 288M | 0.5 - 1.0 | 2.8 x 0.8 | 13.0 | 5.5 | 23 | 100 | |
| BA 638M | 0.5 - 1.5 | 6.3 x 0.8 | 19.0 | 8.0 | 57 | 100 | ERG 0560 |
| BB 638M | 1.5 - 2.5 | 6.3 x 0.8 | 20.0 | 8.0 | 61 | 100 | |

* Use selection chart to determine appropriate die set (see page 333)

See pages 327 to 333 for tooling specifications

# Sta-Kon

## Non-insulated Piggy back disconnect terminal




## Technical Information

| | |
|---|---|
| Material | Brass with 70% copper |
| Plating | Tin plated |
| Temperature rating | +110°C |

## Ordering Information

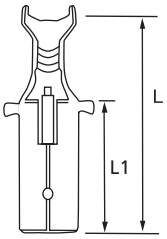
| Product Ref. | Wire size range | For male & female tab size | Dimensions | | Weight | Quantity | Crimping tool* |
|---|---|---|---|---|---|---|---|
| | | | L | L1 | | | |
| | [mm²] | [mm] | [mm] | [mm] | [g/100] | [pieces] | |
| BA 638T | 0.5 - 1.5 | 6.3 x 0.8 | 19.0 | 7.5 | 108 | 100 | ERG 0560 |

* Use selection chart to determine appropriate die set (see page 333)

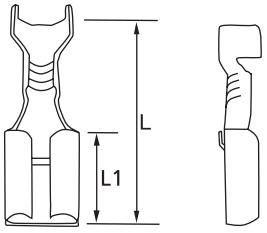
See pages 327 to 333 for tooling specifications

## Non-insulated disconnect terminals with lock tongues

Male: BM638




Female: B 638




## Technical Information

| | |
|---|---|
| Material | Brass with 70% copper |
| Plating | Tin plated |
| Temperature rating | +110°C |

## Ordering Information

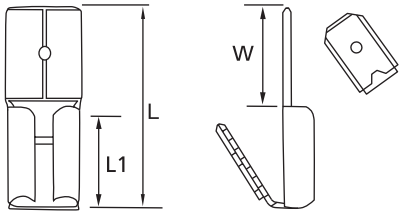
| Product Ref. | Wire size range | For tab size | Dimensions | | Weight | Quantity | Crimping tool* |
|---|---|---|---|---|---|---|---|
| | | | L | L1 | | | |
| | [mm²] | [mm] | [mm] | [mm] | [g/100] | [pieces] | |
| B 638 | 1.5 - 2.5 | 6.3 x 0.8 | 19.0 | 7.5 | 74 | 100 | ERG 0560 |
| BM 638 | 1.5 - 2.5 | 6.3 x 0.8 | 28.0 | 16.0 | 82 | 100 | |

* Use selection chart to determine appropriate die set (see page 333)

See pages 327 to 333 for tooling specifications

# Sta-Kon

## Non-insulated branch off tab




## Technical Information

| | |
|---|---|
| Material | Brass with 70% copper |
| Plating | Tin plated |
| Temperature rating | +110°C |

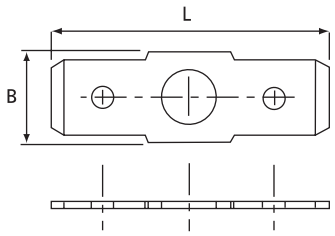
## Ordering Information

| Product Ref. | Tab size | Dimensions | | | Weight | Quantity |
|---|---|---|---|---|---|---|
| | | L | W | L1 | | |
| | [mm] | [mm] | [mm] | [mm] | [g/100] | [pieces] |
| Z 638-2 | 6.3 x 0.8 | 18.5 | 9 | 7.5 | 177 | 100 |

# Non-insulated screw mounted male disconnect tab terminals DIN 46244

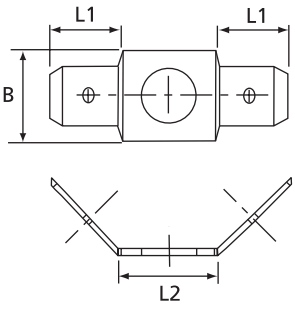
## Technical Information

| | |
|---|---|
| Material | Brass |
| Plating | Tin plated |
| Temperature rating | +110°C |




## Ordering Information: flat version

| Product Ref. | Tab size | Dimensions | | Hole ø | Weight | Quantity |
|---|---|---|---|---|---|---|
| | | B | L | | | |
| | [mm] | [mm] | [mm] | [mm] | [g/100] | [pieces] |
| ZG 638-4 | 6.3 x 0.8 | 7.0 | 23.0 | 4.2 | 94 | 100 |



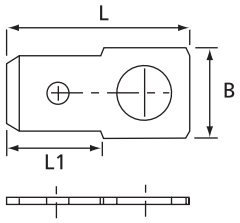

## Ordering Information: 2 x 45° angled version

| Product Ref. | Angle | Tab size | Dimensions | | | Hole ø | Weight | Quantity |
|---|---|---|---|---|---|---|---|---|
| | | | B | L1 | L2 | | | |
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [g/100] | [pieces] |
| ZG 638-4W | 2 x 45° | 6.3 x 0.8 | 8.0 | 10.0 | 12.0 | 4.3 | 152 | 100 |

# Non-insulated screw mounted male disconnect tab terminals DIN 46244

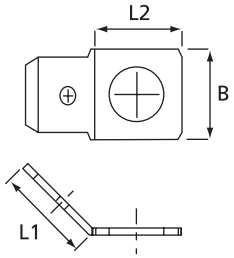
## Technical Information

| | |
|---|---|
| Material | Brass |
| Plating | Tin plated |
| Temperature rating | +110°C |



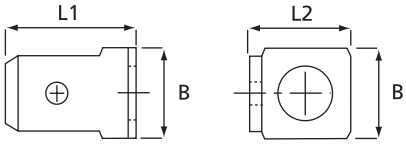

## Ordering Information: flat version

| Product Ref. | Tab size | Dimensions | | | Hole ø | Weight | Quantity |
|---|---|---|---|---|---|---|---|
| | | B | L | L1 | | | |
| | [mm] | [mm] | [mm] | [mm] | [mm] | [g/100] | [pieces] |
| Z 288-2 | 2.8 x 0.8 | 4.5 | 13.1 | 5.5 | 2.8 | 24 | 100 |
| Z 488-3 | 4.8 x 0.8 | 6.5 | 17.5 | 7.0 | 3.2 | 68 | 100 |
| Z 638-4 | 6.3 x 0.8 | 8.1 | 19.1 | 8.3 | 4.4 | 80 | 100 |
| Z 638-5 | 6.3 x 0.8 | 8.0 | 19.2 | 8.3 | 5.4 | 74 | 100 |




## Ordering Information: 45° angled version

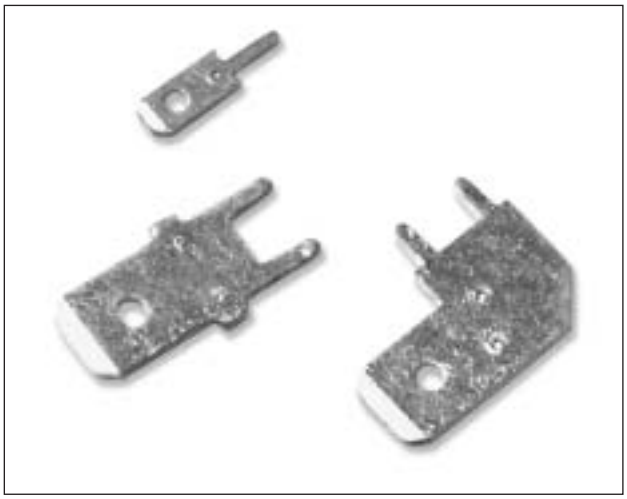
| Product Ref. | Angle | Tab size | Dimensions | | | Hole ø | Weight | Quantity |
|---|---|---|---|---|---|---|---|---|
| | | | B | L1 | L2 | | | |
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [g/100] | [pieces] |
| Z 638-4-4 | 45° | 6.3 x 0.8 | 8.0 | 8.0 | 8.0 | 4.1 | 81 | 100 |
| Z 638-5-4 | 45° | 6.3 x 0.8 | 8.0 | 8.0 | 8.0 | 5.4 | 74 | 100 |




## Ordering Information: 90° angled version

| Product Ref. | Angle | Tab size | Dimensions | | | Hole ø | Weight | Quantity |
|---|---|---|---|---|---|---|---|---|
| | | | B | L1 | L2 | | | |
| | | [mm] | [mm] | [mm] | [mm] | [mm] | [g/100] | [pieces] |
| Z 488-3-9 | 90° | 4.8 x 0.8 | 7.8 | 8.8 | 7.5 | 4.5 | 59 | 100 |
| Z 638-4-9 | 90° | 6.3 x 0.8 | 7.8 | 8.3 | 8.8 | 5.4 | 76 | 100 |

# Non-insulated tabs for soldering DIN 46244

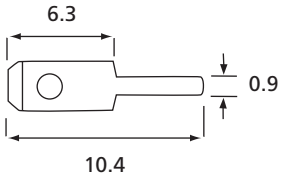


## Technical Information

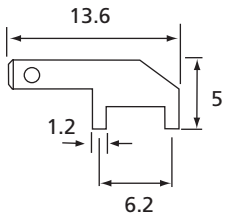
| | |
|---|---|
| Material | Brass |
| Plating | Tin plated |
| Temperature resistance | +110°C |

## Ordering Information

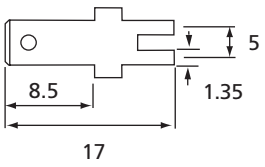
| Product Ref. | Recommended drill hole Ø [mm] | Tab size [mm] | Weight [g/100] | Quantity [pieces] |
|---|---|---|---|---|
| B 288L | 1.0 | 2.8 x 0.8 | 16 | 100 |



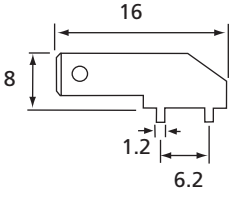

| Product Ref. | Recommended drill hole Ø [mm] | Tab size [mm] | Weight [g/100] | Quantity [pieces] |
|---|---|---|---|---|
| B 288LD | 1.3 | 2.8 x 0.8 | 37 | 100 |




| Product Ref. | Recommended drill hole Ø [mm] | Tab size [mm] | Weight [g/100] | Quantity [pieces] |
|---|---|---|---|---|
| B 638L | 1.45 | 6.3 x 0.8 | 62 | 100 |




| Product Ref. | Recommended drill hole Ø [mm] | Tab size [mm] | Weight [g/100] | Quantity [pieces] |
|---|---|---|---|---|
| B 638LW | 1.3 | 6.3 x 0.8 | 83 | 100 |



# Crimping tools

An extensive range of tooling is available, suiting a variety of requirements, to crimp the following terminals:
- Insulated terminals and bootlace ferrules
- Non-insulated terminals
- Copper tube terminals

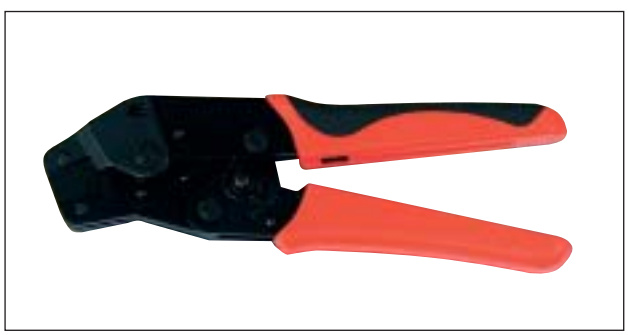
Different types of tooling are offered, depending on volume and application:
- Plier type hand tools for occasional applications ("Do-It-Yourself" users)
- Standard hand tooling for low to medium volume applications
- Ergonomic hand tooling for low to medium volume applications, where high, repeatable quality is essential
- Hydraulic tooling for heavy-duty applications
- Smart tools where no die change is necessary

## Standard crimping tools

### Product Ref.: WT52
- Plier type tool
- For **insulated** and **non-insulated terminals** from 0.5 to 6 mm²
- Incorporates wire stripper and bolt cutters
- Recommended for 'Do-It-Yourself' applications only
- Length: 225 mm
- Weight: 200 g

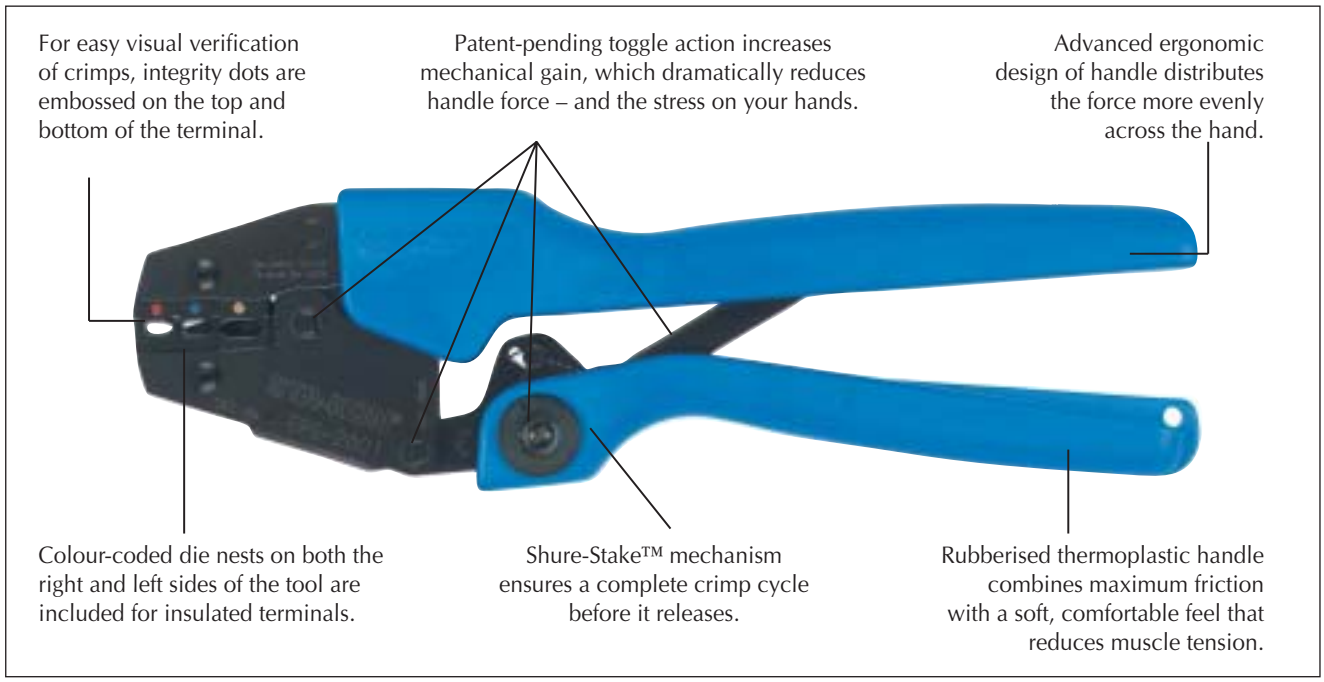
### Product Ref.: WT2124Y
- Ratchet type hand tool, fixed die
- For **insulated terminals** from:
  0.5 to 1.5 mm² red
  1.5 to 2.5 mm² blue
  4.0 to 6.0 mm² yellow
- Built in **Shure-Stake™** mechanism to ensure a full compression every time
- Length: 228 mm
- Weight: 533 g

### Product Ref.: TBZ3
- Ratchet type hand tool, fixed die
- Front loading
- For **insulated bootlace ferrules,** 0.5 to 6.0 mm²
- Built in **Shure-Stake™** mechanism to ensure a full compression every time
- Length: 195 mm
- Weight: 390 g



# Ergonomic hand tools

- Ergonomic ratchet style hand tools used for installing insulated and non-insulated terminals
- Specially designed ergonomic handles distribute the crimping force more evenly across the user's hands. This helps to reduce the risk of Carpal Tunnel Syndrome, the cause of almost one in two industrial injuries
- Ratchet design greatly reduces handle forces over conventional hand tools and incorporates the **Shure-Stake™ mechanism** which ensures a full crimp cycle every time
- Most dies incorporate wire range mark for easy inspection (insulated only)
- Colour coded die nests (insulated only) makes terminal and die nest selection easy
- The product design and engineering results in a long lasting precision tool
- Exists in 2 versions: with interchangeable dies or with fixed dies

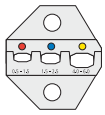
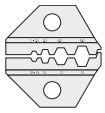
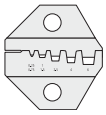
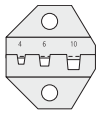
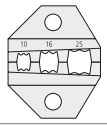
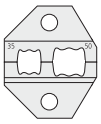



## Ergonomic hand tools with interchangeable dies

**Product Ref.: ERG2000KE**

- Ergonomic hand tool with interchangeable dies
- Frame, with the option of interchangeable steel dies
- A versatile tool, one frame with a selection of dies covers a large range of terminals. (See tooling chart for die selection page 333)
- **Shure-Stake™ mechanism**
- Length: 255 mm
- Weight: 510 g

## ERG2000KE Die selection chart

| Technical drawing | Die product ref. | Terminal description | Cross section [mm²] |
|---|---|---|---|
|  | D-0760DIN | Insulated terminal | 0.5 - 6.0 |
|  | D-1060G | Non-insulated terminal<br>Copper tube lug | 0.5 - 6.0 |
|  | D-0560 | Insulated bootlace ferrule<br>Non-insulated bootlace ferrule | 0.5 - 6.0 |
|  | D-4010 | Insulated bootlace ferrule<br>Non-insulated bootlace ferrule | 4, 6, 10 |
|  | D-1025 | Insulated bootlace ferrule<br>Non-insulated bootlace ferrule | 10, 16, 25 |
|  | D-3550 | Insulated bootlace ferrule<br>Non-insulated bootlace ferrule | 35, 50 |

## Ergonomic hand tools with fixed die

### Product Ref.: ERG2001A

- Ergonomic fixed die tool, with three colour-coded die nests for easy selection
- For **insulated terminals** from:
  0.5 to 1.5 mm² red
  1.5 to 2.5 mm² blue
  4.0 to 6.0 mm² yellow
- **Shure-Stake™ mechanism**
- Length: 255 mm
- Weight: 560 g

### Product Ref.: ERG2106

- Ergonomic fixed die tool
- With 5 die nests
- For **insulated and non-insulated bootlace ferrules** (cord end terminals) from 0.5 to 6.0 mm²
- **Shure-Stake™ mechanism**
- Length: 255 mm
- Weight: 560 g

### Product Ref.: ERG2510

- Ergonomic fixed die tool, with 2 die nests
- For **insulated terminals** from:
  0.25 to 0.5 mm²
  0.5 to 1.0 mm²
- **Shure-Stake™ mechanism**
- Length: 215 mm
- Weight: 470 g

### Product Ref.: ERG1475

- Ergonomic fixed die tool, with 3 die nests
- For **non-insulated male & female disconnects (F-crimps)** from:
  0.1 to 0.5 mm²
  0.5 to 1.0 mm²
  1.0 to 1.5 mm²
- **Shure-Stake™ mechanism**
- Length: 215 mm
- Weight: 470 g

### Product Ref.: ERG0560

- Ergonomic fixed die tool, with 3 die nests
- For **non-insulated male & female disconnects (F-crimps)** from:
  0.5 to 1.5 mm²
  1.5 to 2.5 mm²
  4.0 to 6.0 mm²
- **Shure-Stake™ mechanism**
- Length: 255 mm
- Weight: 560 g

### Product Ref.: ERG2002E

- Ergonomic fixed die tool with 3 die nests
- For **non-insulated terminals** and **copper tube lugs** from:
  0.5 to 1.5 mm²
  1.5 to 2.5 mm²
  4.0 to 6.0 mm²
- **Shure-Stake™ mechanism**
- Length: 255 mm
- Weight: 550 g

## Ergonomic hand tools with fixed die

### Product Ref.: ERG1016

- Ergonomic fixed die tool, with 2 die nests
- For **non-insulated terminals** and **copper tube lugs** of:
  10 mm²
  16 mm²
- **Shure-Stake™ mechanism**
- Length: 255 mm
- Weight: 550 g

## Large hand tool

### Product Ref.: WT3165B

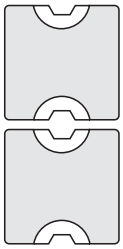
- Large fixed die tool, with rotating head and 6 nests
- For **non-insulated terminals** and **copper tube lugs** from:
  10 to 95 mm²
- According to DIN, SEN, BS, UL, Mil specifications
- **Shure-Stake™ mechanism**
- Length: 500 mm
- Weight: 2,8 kg
- Max. pressure: 130 kN

## Hydraulic hand tool

### Product Ref.: WTH500

- High quality hydraulic hand tool with interchangeable dies
- For **non-insulated terminals** and **copper tube lugs** from:
  10 to 95 mm²
- 180° rotating head to get into hard to reach places
- **Shure-Stake™ mechanism**
- Complete with plastic carrying case
- Length: 470 mm
- Weight: 3 kg
- Max. performance: 60 kN

## WTH500 Die selection chart

| Technical drawing | Die product ref. | Terminal description | Cross-section [mm²] |
|---|---|---|---|
|  | TB6-8DIN | Copper tube lug | 10 - 16 |
| | TB10-12DIN | Copper tube lug | 25 - 35 |
| | TB14-16DIN | Copper tube lug | 50 - 70 |
| | TB18DIN | Copper tube lug | 95 |

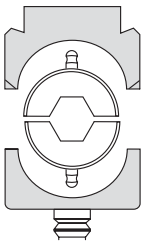
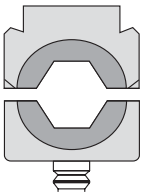
# Sta-Kon

## Hydraulic tool head

### Product Ref.: WT3014E

- Hydraulic tool head with interchangeable dies
- For **non-insulated terminals** and **copper tube lugs** from: 16 to 300 mm²
- Crimping according to DIN46235
- Hand or foot activated switch
- Rapid coupling
- To be used with a hydraulic pump (10.000 p.s.i.= 690 bar = 69 MPa)
- Length: 295 mm
- Weight: 4 kg
- Output pressure: 15 ton
- Max. performance: 130kN

## WT3014E Die selection chart

| Technical drawing | Die product ref. (+ Die adapters) | Terminal description | Cross-section [mm²] |
|---|---|---|---|
|  V1318 / V1316 | B6DIN (+V1318, V1316) | Copper tube lug | 10 |
| | B8DIN (+V1318, V1316) | Copper tube lug | 16 |
| | B10DIN (+V1318, V1316) | Copper tube lug | 25 |
| | B10DIN (+V1318, V1316) | Copper tube lug | 25 |
| | B12DIN (+V1318, V1316) | Copper tube lug | 35 |
| | B14DIN (+V1318, V1316) | Copper tube lug | 50 |
| | B16DIN (+V1318, V1316) | Copper tube lug | 70 |
| | B18DIN (+V1318, V1316) | Copper tube lug | 95 |
| | B20DIN (+V1318, V1316) | Copper tube lug | 120 |
| | B22DIN (+V1318, V1316) | Copper tube lug | 150 |
|  | 13B25DIN | Copper tube lug | 185 |
| | 13B28DIN | Copper tube lug | 240 |
| | 13B32DIN | Copper tube lug | 300 |

# Tooling and die selection chart

| Product family | Cross-sections [mm²] | Plier type hand tool | Fixed die hand tool | Frame with interchangeable dies (+ dies) | Hydraulic tool (+dies) | Hydraulic tool head & dies |
|---|---|---|---|---|---|---|
| **INSULATED TERMINALS, DISCONNECTS AND BOOTLACE FERRULES** | | | | | | |
| Insulated terminals and disconnects (Includes all the types of insulated terminals except the bootlace ferrules) | | | | | | |
|  | 0.25 - 0.5 | | ERG 2510 | | | |
| | 0.5 - 1.0 | WT52 | ERG2510 | ERG2000KE (+ D-0760DIN) | | |
| | 0.5 - 6.0 | WT52 | WT2124Y ERG2001A | ERG2000KE (+ D-0760DIN) | | |
| Insulated bootlace ferrules (cord end terminals)** | | | | | | |
|  | 0.5 - 6.0 | WT52 | ERG2106 TBZ3 | ERG2000KE (+ D-0560) | | |
| | 4, 6, 10 | | | ERG2000KE (+ D-4010) | | |
| | 10, 16, 25 | | | ERG2000KE (+ D-1025) | | |
| | 35, 50 | | | ERG2000KE (+ D-3550) | | |
| **NON-INSULATED TERMINALS AND DISCONNECTS** | | | | | | |
| Non-insulated terminals | | | | | | |
|  | 0.5 - 6.0 | WT52 | ERG2002E | ERG2000KE (+ D-1060G) | | |
| Non-insulated disconnects (F-crimps) | | | | | | |
|  | 0.14 - 0.25 | | ERG1475 | | | |
| | 0.25 - 0.5 | | ERG1475 | | | |
| | 0.5 - 6.0 | | ERG0560 | | | |
| **NON-INSULATED COPPER TUBE LUGS** | | | | | | |
|  | 0.5 - 6.0 | | ERG2002E | ERG2000KE (+ D-1060G) | | |
| | 10 | | ERG1016 WT3165B | | WTH500 (+ TB6-8DIN) | WT3014E* (+ B6DIN) |
| | 16 | | ERG1016 WT3165B | | WTH500 (+ TB6-8DIN) | WT3014E* (+ B8DIN) |
| | 25 | | WT3165B | | WTH500 (+ TB10-12DIN) | WT3014E* (+ B10DIN) |
| | 35 | | WT3165B | | WTH500 (+ TB10-12DIN) | WT3014E* (+ B12DIN) |
| | 50 | | WT3165B | | WTH500 (+ TB14-16DIN) | WT3014E* (+ B14DIN) |
| | 70 | | WT3165B | | WTH500 (+ TB14-16DIN) | WT3014E* (+ B16DIN) |
| | 95 | | WT3165B | | WTH500 (+ TB18DIN) | WT3014E* (+ B18DIN) |
| | 120 | | | | | WT3014E* (+ B20DIN) |
| | 150 | | | | | WT3014E* (+ B22DIN) |
| | 185 | | | | | WT3014E (+ 13B25DIN) |
| | 240 | | | | | WT3014E (+ 13B28DIN) |
| | 300 | | | | | WT3014E (+ 13B32DIN) |

* To be used with a Hydraulic pump, with die adaptors V1316, V1318

** The tools WT52, ERG2106, ERG2000KE can also crimp non-insulated bootlace ferrules

Thomas & Betts offer a wide variety of specialty tools used most commonly by electricians. Easy to use, they are convenient to all kind of job, whether it is new installation or maintenance.

Designed for the professionals, all the stripping and cutting tools from Thomas & Betts are manufactured from top quality materials to assure durability and a long usable life. Single purpose and combination function designs are included.

Different types of tools are offered, depending on volume and application:

- **Ergonomic hand tools** for medium to high volume applications, where high, repeatable quality as well as durability and comfort of use are essential
- **Standard hand tools** for medium volume applications
- **Heavy duty cable cutters,** for cables of large cross-section

## Ergonomic stripping / cutting tool

### Product Ref.: ERG1-WS

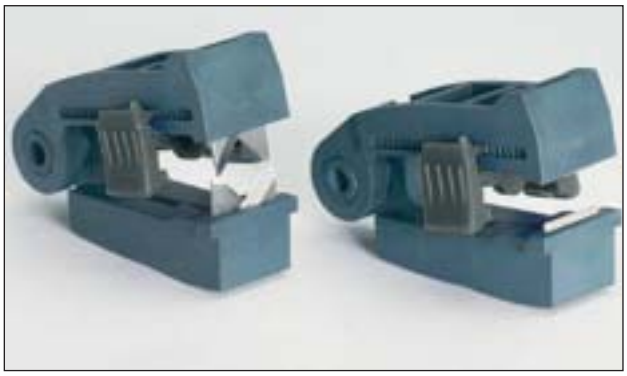
- Ergonomic, self-adjusting wire stripping & cutting tool
- The **widest** stripping range in the industry for this type of tool: from 0.02 mm² to 10 mm² insulated wires
- Incorporates interchangeable stripping cassettes for a wide range of wire insulations
- The lightweight, ergonomic design makes this tool ideal for higher volume production as well as portable field usage.
- Replaces the ERG1 cutting / stripping tool

### Feature & Benefits:

- **Versatile** - Interchangeable cassettes for stripping a wide range of insulations without having to change tools. Integral wire cutter, to cut and strip with the same tool.
- **Powerful** - V-Blade cassette designed for stripping difficult insulations like PTFE coated wire.
- **Safe & Ergonomic** - Stationary handle has a soft grip moulded into the tool for extra comfort. Optimised grip span and lightweight ensures comfortable operation for the user. Cutting blades are not exposed so user's hands are protected.
- **Automatic & Precise** - Tool automatically strips wire to preset length. Hard plastic wire-stop allows the user to easily adjust wire strip length. The fine adjusting slide allows the user to strip thin insulation jackets without damaging conductors.
- **Durable & Reliable** - Cutting blades manufactured from high grade hardened steel. Body is moulded in a new high strength plastic to withstand the harshest working environments. The tool has been tested to over 150,000 cycles.

## Technical Information

| | |
|---|---|
| Stripping Capacity | • Straight Blade Cassette (SBC-1): PVC Insulations, 0.02 - 10 mm²<br>• "V" Blade Cassette (VBC-1): all insulations, 0.02 - 6 mm² |
| Cutting Capacity | Flexible wires: 10 mm²<br>Rigid wires: 1.5 mm² |
| Dimensions | 191 x 123 x 20 mm |
| Weight | 136 g |



## Ordering Information

| Product Ref. | Description |
|---|---|
| ERG1-WS | Ergonomic Wire Stripping & Cutting Tool, interchangeable cassettes. Supplied with 1ea. SBC-1 cassette |
| SBC-1 | Replacement Cassette - Straight blade, for PVC insulations from 0.02 to 10 mm² |
| VBC-1 | Replacement Cassette - "V" blade, for all insulations from 0.02 to 6 mm² |

Sta-Kon

## Standard Wire Stripper

- Fully insulated automatic wire stripper for all stranded and solid conductors of 0.2 - 6.0 mm² (24 - 10 AWG)
- The special scanning system automatically adjusts to the diameter of the wire and ensures quick and accurate stripping without leaving witness marks on the insulation, or damage to the conductor
- The ergonomic design and the light weight guarantee fatigue-free operation
- The slim plier type jaw enables access to wiring in confined spaces such as in switching cabinets, junction and distribution boxes

## Ordering Information

| Product Ref. | Functionality | Cable cross-section | Weight [g] |
|---|---|---|---|
| Superstrip 5 | Wire stripping solid and stranded | 0.2 - 6.0 mm² (24 - 10 AWG) | 105 |

## Cable Strippers

- Accurate, fast and safe stripping of all round cables from 4 - 28 mm diameter
- Removable reducing adapter, made of highly abrasion resistant plastic (POM)
- No damage of the inner conductors due to infinitely variable adjustment of the cutting depth
- Each cable stripper contains a spare swivel-blade inside the handle

Cabstrip 4-16

Cabstrip 4-28H

Cabstrip 8-27

## Ordering Information

| Product Ref. | Functionality | Cable diameter [mm] | Weight [g] |
|---|---|---|---|
| Cabstrip 4-16 | Round cable stripping | 4 - 16 | 70 |
| Cabstrip 4-28H | Round cable stripping | 4 - 28 | 84 |
| Cabstrip 8-27 | Round cable stripping | 8 - 28 | 72 |

# Sta-Kon

## Coax Cable Stripper

### Product Ref.: Coaxstrip 3

- Two or three level stripping of all coaxial cables (e.g. antenna and transmission cables) of 4.8 to 7.5 mm outer diameter
- Also strips flexible cable such as 3 x 0.75 mm², 10 mm² and 16 mm²
- The new ergonomic handle allows faster and more convenient stripping
- Needs no adjustment of the cutting depth
- Easily accessible built-in side cutter

## Ordering Information

| Product Ref. | Functionality | Cable sizes | Weight [g] |
|---|---|---|---|
| Coaxstrip 3 | Coaxial and flexible cable stripping | From 4.8 to 7.5 mm diameter for coaxial cables 3 x 0.75 mm², 10 mm² , 16 mm² for flexible cables | 55 |

### Product Ref.: Coaxstrip 2

- This tool strips all common coaxial cables (e.g. antenna and transmission cables) of 4.8 to 7.5 mm outer diameter
- In a few quick operations the braid, the dielectric and the inner conductor of coaxial cables are set free without damage
- Also strips flexible cable such as 3 x 0.75 mm², 10 mm² and 16 mm²

## Ordering Information

| Product Ref. | Functionality | Cable sizes | Weight [g] |
|---|---|---|---|
| Coaxstrip 2 | Coaxial and flexible cable stripping | From 4.8 to 7.5 mm diameter for coaxial cables 3 x 0.75 mm², 10 mm² , 16 mm² for flexible cables | 24 |

Sta-Kon

## Duo Crimp

**Stripping and crimping with only one tool**

**Cable Stripping:**
- Easy stripping of conductors from 0.5 to 6.0 mm² (20 - 10 AWG)
- The special scanning system automatically adjusts to the wire diameter and allows fast and accurate stripping
- The insulation is stripped off at a length of 5 mm and remains on the conductor (this allows proper twisting of stranded wire ends)
- A gauge inside the handle simplifies stripping to a pre-set length

**Crimping of terminals:**
- Two crimping ranges are offered:
  0.5 to 2.5 mm² (20 - 13 AWG)
  4.0 to 6.0 mm² (12 - 10 AWG)
- Easily accessible built-in side cutter for max 6.0 mm² (10 AWG) and solid conductors for 4.0 mm² (12 AWG)
- The blades are made of specially hardened steel

### Ordering Information

| Product Ref. | Functionality | Cable sizes | Weight [g] |
|---|---|---|---|
| Duocrimp 300 | Conductor stripping and crimping | Stripping of conductors from 0.5 to 6.0 mm² (20 - 10 AWG) stripping crimping of conductors from 0.5 to 2.5 mm² (20 - 13 AWG) and from 4.0 to 6.0 mm² (12 - 10 AWG) crimping | 116 |

## Duo Stripper

**Professional cable and wire stripping with only one tool**

**Cable Stripping:**
- Strips all round cables from 4 to 28 mm diameter
- Allows variable adjustment of the cutting depth
- The cable holder is adjustable for cable diameters from 4 to 16 mm or 16 to 28 mm
- The tool handle contains a spare swivel-blade

**Wire Stripping:**
- For stranded and solid conductors from 0.5 to 6.0 mm² (20 -10 AWG)
- Integrated scale for lengths from 8 to 20 mm
- The special scanning system automatically adjusts to the wire diameter and allows quick and accurate stripping

### Ordering Information

| Product Ref. | Functionality | Cable sizes | Weight [g] |
|---|---|---|---|
| Duostrip 200 | Common round cable and wire stripping | Cables from 4 to 28 mm diameter stranded and solid conductors from 0.5 to 6.0 mm² | 123 |

# Sta-Kon

## Duo Stripper

- Fully insulated automatic wire stripper for all stranded and solid conductors of 0.5 - 6.0 mm² (20 - 10 AWG) with integrated scale for lengths from 8 - 20 mm
- The special scanning system automatically adjusts to the wire diameter and allows fast and accurate stripping
- Comes with an easily accessible built-in side cutter for stranded conductors up to 6.0 mm² (10 AWG) and solid conductors up to 4.0 mm² (12 AWG)

### Ordering Information

| Product Ref. | Functionality | Cable cross selection | Weight [g] |
|---|---|---|---|
| Duostrip 150 | Wire stripping | Cables and solid conductors from 0.5 to 6.0 mm² (20 - 10 AWG) | 110 |

## Multi-Stripper

- New tool developed for cable and wire stripping for all round cables from 8 to 13 mm diameter
- Allows circular and longitudinal stripping as well as flush stripping in hard-to-reach areas (e.g. ceilings and walls, junction and distribution boxes, switch cabinets)
- For all stranded and solid conductors of 0.5 mm², 4.0 mm² and 6.0 mm² (20 - 10 AWG)
- Easily accessible built-in side cutter for flexible conductors of maximum 6.0 mm² (10 AWG) and solid conductors of maximum 4.0 mm² (12 AWG)

### Ordering Information

| Product Ref. | Functionality | Cable size | Weight [g] |
|---|---|---|---|
| Multistrip 400 | Cable and wire stripping | Round cables from 8 to 13 mm<br>stranded and solid conductors of 0.5 mm², 0.75 mm²,<br>1.5 mm², 2.5 mm², 4.0 mm² and 6.0 mm² (20 - 10 AWG) | 78 |

## Cable Stripper

- This tool has been specially designed to remove the outer insulation jacket of round cables in confined spaces
- Enables flush stripping in ceiling and wall areas, junction and distribution boxes, switch, cabinets, etc.
- The ergonomic tool design provides for a sure grip and comfort
- In only one operation, the cable sheath is cut and pulled off. No adjustment of cutting depth is necessary

### Ordering Information

| Product Ref. | Functionality | Cable diameter | Weight [g] |
|---|---|---|---|
| Cabstrip 13 | Cables stripping | From 8 to 13 mm | 42 |

Sta-Kon

## Stripping tool display

The stripping tool sales point display is made of high quality powder coated metal. The display is suitable either as a stand-alone or wall-fastened display.

### Product Ref.: MES-DISPLAY

**Contents:**

5pcs Superstrip 5
5pcs Cabstrip 4-28H
5pcs Coaxstrip 3
4pcs Duostrip 200
4pcs Cabstrip 4-16
4pcs Multistrip 400
2pcs Cabstrip 13
4pcs Duocrimp 300
4pcs Duostrip 150

**Display dimensions:**

Height: 1.0 m
Width: 0.36 m
Depth: 0.24 m
Weight: 9 kg

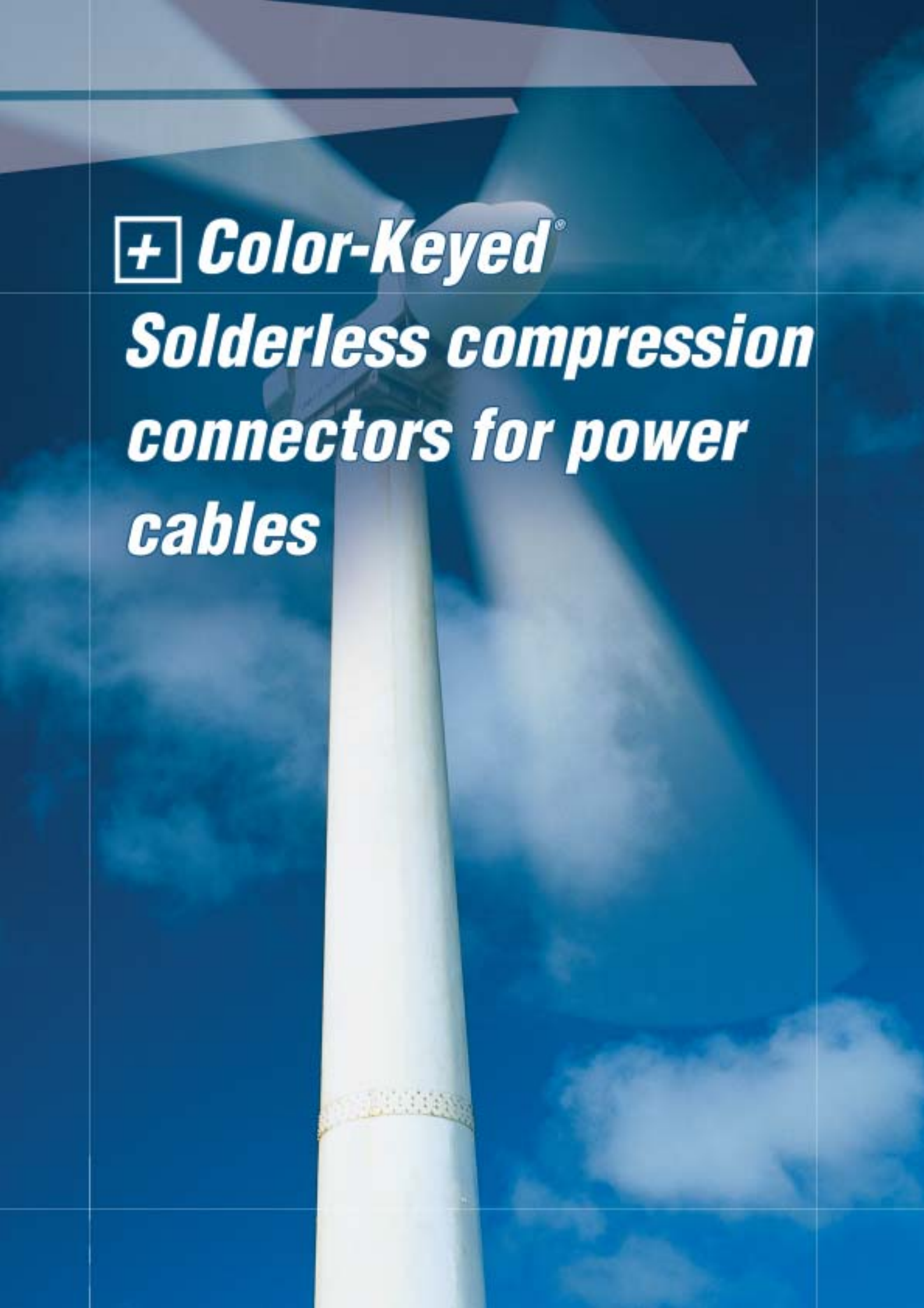
## Heavy-duty cable cutters

### Product Ref.: 364RF and 366RF

- For copper and aluminium cable
- Cuts cables up to 500 mm²
- Fiberglass durable handles and carbon steel blades
- Precision circular cutting
- Easy to operate

## Ordering Information

| Product Ref. | Max. cable cross-section [mm²] | Max. cable diameter [mm] | Length [cm] | weight [kg] | Replacement blade reference Product Ref. |
|---|---|---|---|---|---|
| 364RF | 250 | 30 | 53 | 1.6 | C150001 |
| 366RF | 500 | 50 | 74 | 3.6 | C350001 |



# Color-Keyed®
# Solderless compression connectors for power cables

## 5. Termination systems

## The better method to install solderless compression connectors on power cable

The Thomas & Betts method of installing compression connectors on power cables is designed to provide a high degree of reliability in electrical wiring.

This method allows electrical workers to make installations with little effort and considerable savings in time. The Thomas & Betts method is a simple three-step installing procedure that utilises Color-Keyed® connectors and dies with compression type installing tools.

**Just three steps**

- First, the appropriate connector is chosen for the conductor size
- Next, the proper installing die is selected by matching the die colour to the connector colour
- Last, the die is installed in the tool, and the connector is compressed

# Color-Keyed®

## Overview

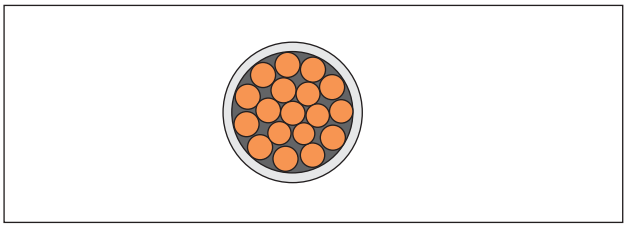
### Precision dies form a solid, homogenous mass

The Thomas & Betts method utilising compression tools with matching dies forms the connector and conductor into a solid, homogenous mass to provide an optimum electrical bond between connector and conductor.

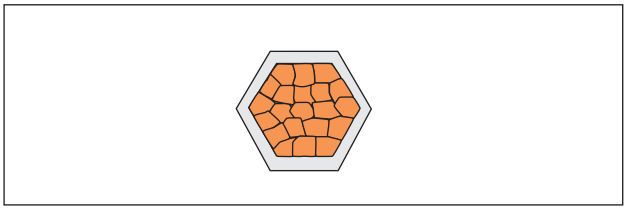
Color-Keyed® dies are designed to produce a circumferential, hex- or diamond-shaped compression rather than a simple indent. Precision dies are an integral part of the Thomas & Betts method.

Each die is designed so that all conductors receive the same amount of compression force. The circumferential compression creates a large area of high pressure contact between cable and connector which, in turn, assures high conductivity, low resistance, and high pullout values which exceed UL requirements.

These features result in a permanent, low installed cost connection. You can install it, and forget it.



Before compression, a typical cross section of cable and connector consists of about 75% metal and 25% air.



Air compression by the T&B Method, the cross section looks like this, 100% metal with virtually no air spaces.

### The Color-Keyed® system from Thomas & Betts tells you where to place the installing die

Color-Keyed® connectors not only identify the correct installing die to be used for positive compressions, but also indicate the proper placement of the die on the connector. This is done by the coloured rings around the connector which match the colour on the dies. Compression is made between or on these colour bands. The colour name is also spelled on the connector as an added means of identification.

The die is positioned between colour bands for copper connectors and on the bands for aluminium connectors.

| Features | Benefits |
|---|---|
| High conductivity electrolytic copper | Excellent electrical conductivity thanks to lowest electrical resistance, associated to superior tensile strength |
| Tubular construction | No seam, ensuring excellent mechanical properties |
| Electro-tin plated | Enhanced corrosion resistance |
| Colour-coding according to the cross-section of the cable, by marking the connector with coloured rings and with the name of the colour | Easy selection of the connector, the die and the tool according to the size of the cable<br>Higher level of reliability |
| Die-code engraved on the surface of the die | Easy and reliable inspection |
| Specifications | According to DIN and UL |

# 5.2 Color-Keyed®

## Standard product offering

### Two-way splices

- For copper cable
- 600V to 35kV
- 2 types: - standard barrel
  - long barrel

### Lugs

- For copper cable
- 600V to 35kV
- Standard barrel
- 2 types: - one installing hole
  - two installing holes

See pages 346 to 349 for detailed information on standard product offering

## Special & customised product offering

### Color-Keyed®: special lugs for special applications

**Angled, shaped and trimmed**

Thomas & Betts can solve your difficult wire bending and terminating problems in confined power distribution panels, switchgear and motor control enclosures. We have the design and production capability to deliver exactly the type of lug you need, shaped the way you need.

- Straight, 45° and 90° angle
- Stacking or non-stacking
- Narrow tongue or standard
- Tin, silver, lead, nickel plated Thomas & Betts offer an extensive line of copper Color-Keyed® lugs for flexible and solid cables.

The lug tongues are modified in several different configurations to meet your exact needs: 45° and 90° bend angles, narrow tongues to fit into circuit breakers, offset tongues to stack two cables, and special stud hole drilling.

These special configurations let you:
1. run the cable directly to the bus bar with no bending,
2. terminate into very narrow spaces, and
3. utilise minimal bus bar space.

The specially designed lugs help you “clean up” your cabling in crowded enclosures.

### Customised Color-Keyed® lugs

**Connectors for Copper Cables**

All customised lugs can be made to order. Minimum order quantity: standard package quantity by cable size. Consult your Sales Office for price and delivery.

## Unit conversion table: AWG round wire size to diameter and cross-section

| Wire size AWG | Nominal diameter [inch] | Nominal diameter [mm] | Cross-section [mm²] | CMA circular mils [cmil] |
|---|---|---|---|---|
| 4/0 | 0.4600 | 11.684 | 107.219 | 211600 |
| 3/0 | 0.4096 | 10.404 | 85.011 | 167800 |
| 2/0 | 0.3648 | 8.547 | 67.432 | 133100 |
| 1/0 | 0.3249 | 8.252 | 53.488 | 105600 |
| 1 | 0.2893 | 7.348 | 42.409 | 83690 |
| 2 | 0.2576 | 6.543 | 33.624 | 66360 |
| 3 | 0.2294 | 5.827 | 26.655 | 52620 |
| 4 | 0.2043 | 5.189 | 21.149 | 41740 |
| 5 | 0.1819 | 4.620 | 16.766 | 33090 |
| 6 | 0.1620 | 4.115 | 13.289 | 26240 |
| 7 | 0.1443 | 3.665 | 10.551 | 20820 |
| 8 | 0.1285 | 3.264 | 8.387 | 16510 |
| 9 | 0.1144 | 2.906 | 6.632 | 13090 |
| 10 | 0.1019 | 2.588 | 5.262 | 10380 |
| 11 | 0.0907 | 2.304 | 4.168 | 8230 |
| 12 | 0.0808 | 2.052 | 3.308 | 6530 |
| 13 | 0.0720 | 1.829 | 2.627 | 5180 |
| 14 | 0.0641 | 1.628 | 2.082 | 4110 |
| 15 | 0.0571 | 1.450 | 1.652 | 3260 |
| 16 | 0.0508 | 1.290 | 1.308 | 2580 |
| 17 | 0.0453 | 1.151 | 1.040 | 2050 |
| 18 | 0.0403 | 1.024 | 0.823 | 1620 |
| 19 | 0.0359 | 0.912 | 0.653 | 1290 |
| 20 | 0.0320 | 0.813 | 0.519 | 1020 |
| 21 | 0.0285 | 0.724 | 0.412 | 812 |
| 22 | 0.0253 | 0.643 | 0.324 | 640 |
| 23 | 0.0226 | 0.574 | 0.259 | 511 |
| 24 | 0.0201 | 0.511 | 0.205 | 404 |
| 25 | 0.0179 | 0.455 | 0.162 | 320 |
| 26 | 0.0159 | 0.404 | 0.128 | 253 |
| 27 | 0.0142 | 0.316 | 0.104 | 202 |
| 28 | 0.0126 | 0.320 | 0.080 | 159 |
| 29 | 0.0113 | 0.287 | 0.065 | 128 |
| 30 | 0.0100 | 0.254 | 0.051 | 100 |
| 31 | 0.0089 | 0.226 | 0.040 | 79 |
| 32 | 0.0080 | 0.203 | 0.032 | 64 |

Note: 1 kcmil = 1000 cmil

## Unit conversion table: American bolt sizes

| US Bolt size | Min. hole diameter [mm] | [inch] | Matching bolt in metric size |
|---|---|---|---|
| 2 | 2.337 | 0.092 | M2 |
| 4 | 2.946 | 0.116 | M2.5 |
| 6 | 3.632 | 0.143 | M3 |
| 8 | 4.292 | 0.169 | M4 |
| 10 | 4.978 | 0.196 | M4 |
| 1/4 | 6.655 | 0.262 | M6 |
| 5/16 | 8.204 | 0.323 | M8 |
| 3/8 | 9.855 | 0.388 | M8 |
| 7/16 | 11.506 | 0.453 | M10 |
| 1/2 | 13.106 | 0.516 | M12 |
| 5/8 | 16.510 | 0.650 | M16 |
| 3/4 | 19.685 | 0.775 | M18 |

# 5.2 Color-Keyed®

## Two-way splice connectors for copper cable standard barrel 600 V to 35 kV applications

Two-way connectors provide high pullout values, are easy to insulate, and provide a low resistance connection of high quality and low installed cost.


## Technical Information

| | |
|---|---|
| Material | High conductivity wrought copper |
| Plating | Electro-tin plated |
| Metal barrel | Copper tube |
| Voltage | 600V to 35kV |
| Marking | Colour reference for die and cable size |

## Approvals

004503

E9809

## Ordering Information

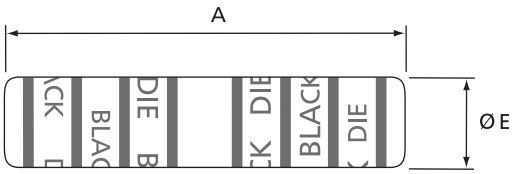
| Product Ref. | USA Cable size | Approx. European Cable size [mm²] | Colour | Tooling die code | Dimensions A [mm] | Dimensions E [mm] | Weight [kg/100] | Quantity [pieces] |
|---|---|---|---|---|---|---|---|---|
| 54504 | # 8 AWG | 8 | Red | 21 | 25.4 | 6.9 | 0.540 | 50 |
| 54505 | # 6 AWG | 13 | Blue | 24 | 25.4 | 7.6 | 0.553 | 50 |
| 54506 | # 4 AWG | 21 | Grey | 29 | 25.4 | 9.4 | 0.816 | 50 |
| 54507 | # 2 AWG | 25 - 34 | Brown | 33 | 31.8 | 10.4 | 1.252 | 25 |
| 54508 | # 1 AWG | 42 | Green | 37 | 38.1 | 11.9 | 1.633 | 20 |
| 54509 | 1/0 AWG | 53 | Pink | 42H | 41.4 | 13.2 | 2.132 | 10 |
| 54510 | 2/0 AWG | 67 | Black | 45 | 44.5 | 14.5 | 2.903 | 10 |
| 54511 | 3/0 AWG | 85 | Orange | 50 | 44.5 | 16.0 | 3.221 | 10 |
| 54512 | 4/0 AWG | 107 | Violet | 54H | 47.8 | 17.8 | 4.146 | 10 |
| 54513 | 250 kcmil | 125 | Yellow | 62 | 57.2 | 19.6 | 4.990 | 10 |
| 54514 | 300 kcmil | 150 | White | 66 | 54.1 | 21.1 | 6.328 | 10 |
| 54515 | 350 kcmil | 175 | Red | 71H | 57.2 | 22.9 | 7.711 | 10 |
| 54516 | 400 kcmil | 200 | Blue | 76 / 80 | 69.9 | 23.6 | 10.582 | 6 |
| 54518 | 500 kcmil | 250 | Brown | 87H | 69.9 | 28.2 | 13.699 | 6 |
| 54520 | 600 kcmil | 300 | Green | 94H | 76.2 | 30.0 | 19.577 | 6 |
| 54522-TB | 700 kcmil | 350 | Pink | 99H | 82.6 | 31.2 | 19.654 | 6 |
| 54523-TB | 750 kcmil | 375 | Black | 106H | 76.2 | 33.0 | 22.362 | 6 |
| 54528 | 1000 kcmil | 500 | – | – | 92.2 | 38.1 | 36.287 | 3 |

For tooling see pages 350 to 353

This represents a small part of the Color-Keyed® range, please contact your Sales Office for additional product information

# Color-Keyed®

Two-way splice connectors for copper cable long barrel
600 V to 35 kV applications




## Technical Information

| | |
|---|---|
| Material | High conductivity wrought copper |
| Plating | Electro-tin plated |
| Metal barrel | Copper tube |
| Voltage | 600V to 35kV |
| Marking | Colour reference for die and cable size |

## Approvals

004503

E9809

## Ordering Information

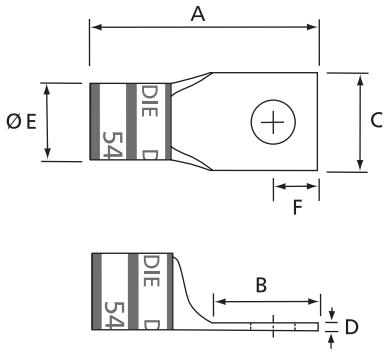
| Product Ref. | USA Cable size | Approx. European Cable size [mm²] | Colour | Tooling die code | Dimensions A [mm] | Dimensions E [mm] | Weight [kg/100] | Quantity [pieces] |
|---|---|---|---|---|---|---|---|---|
| 54804 | # 8 AWG | 8 | Red | 21 | 44.5 | 6.4 | 0.789 | 50 |
| 54805 | # 6 AWG | 13 | Blue | 24 | 44.5 | 7.1 | 0.916 | 50 |
| 54806 | # 4 AWG | 21 | Grey | 29 | 44.5 | 9.1 | 1.315 | 50 |
| 54807 | # 2 AWG | 25 - 34 | Brown | 33 | 47.6 | 10.3 | 1.787 | 25 |
| 54808 | # 1 AWG | 42 | Green | 37 | 50.8 | 11.9 | 2.041 | 20 |
| 54809 | 1/0 AWG | 53 | Pink | 42H | 50.8 | 13.5 | 2.631 | 10 |
| 54810 | 2/0 AWG | 67 | Black | 45 | 54.0 | 14.7 | 3.130 | 10 |
| 54811 | 3/0 AWG | 85 | Orange | 50 | 57.2 | 15.9 | 4.014 | 10 |
| 54812 | 4/0 AWG | 107 | Violet | 54H | 69.9 | 17.9 | 5.874 | 10 |
| 54813 | 250 kcmil | 125 | Yellow | 62 | 85.7 | 19.5 | 7.439 | 10 |
| 54814 | 300 kcmil | 150 | White | 66 | 88.9 | 21.5 | 9.571 | 10 |
| 54815 | 350 kcmil | 175 | Red | 71H | 95.3 | 23.9 | 12.837 | 10 |
| 54816 | 400 kcmil | 200 | Blue | 76 / 80 | 95.3 | 24.6 | 13.227 | 6 |
| 54818 | 500 kcmil | 250 | Brown | 87H | 120.7 | 27.8 | 23.678 | 6 |
| 54820 | 600 kcmil | 300 | Green | 94H | 108.0 | 30.2 | 25.809 | 6 |
| 54823 | 750 kcmil | 375 | Black | 106H | 120.7 | 33.7 | 35.380 | 6 |
| 54828 | 1000 kcmil | 500 | – | – | 142.9 | 39.3 | 54.068 | 3 |
| 54833 | 1500 kcmil | 750 | – | – | 165.1 | 47.6 | 95.000 | 3 |
| 54839 | 2000 kcmil | 1000 | – | 106H | 179.3 | 54.0 | 150.000 | 3 |

For tooling see pages 350 to 353

This represents a small part of the Color-Keyed® range, please contact your Sales Office for additional product information

# 5.2 Color-Keyed®

One hole lug for copper cable
Standard barrel
600 V to 35 kV applications




## Technical Information

| | |
|---|---|
| Material | High conductivity wrought copper |
| Plating | Electro-tin plated |
| Metal barrel | Copper tube |
| Voltage | 600V to 35kV |
| Marking | Colour reference for die and cable size |

## Approvals

007222 E9809

## Ordering Information

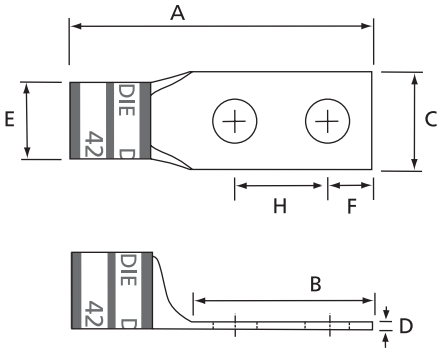
| Product Ref. | USA Cable size | Approx. European Cable size [mm²] | Stud size USA | Stud size metric equivalent | Colour | Tooling die code | Dimensions A [mm] | B [mm] | C [mm] | D [mm] | E [mm] | F [mm] | Weight [kg/100] | Quantity [pieces] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 54132 | # 8 AWG | 8 | 3/8 | M 8 | Red | 21 | 33.8 | 16.3 | 14.2 | 1.3 | 6.4 | 7.1 | 1.361 | 50 |
| 54136 | # 6 AWG | 13 | 3/8 | M 8 | Blue | 24 | 35.8 | 17.0 | 15.2 | 1.8 | 7.9 | 7.9 | 0.603 | 50 |
| 54140 | # 4 AWG | 21 | 3/8 | M 8 | Grey | 29 | 36.1 | 16.8 | 15.5 | 1.8 | 9.4 | 7.9 | 0.912 | 50 |
| 54145-TB | # 2 AWG | 25 - 34 | 1/2 | M 12 | Brown | 33 | 48.8 | 27.4 | 19.1 | 2.0 | 10.4 | 12.7 | 1.633 | 25 |
| 54150 | # 1 AWG | 42 | 1/2 | M 12 | Green | 37 | 53.3 | 31.8 | 19.3 | 2.8 | 11.9 | 12.7 | 2.041 | 20 |
| 54155-TB | 1/0 AWG | 53 | 1/2 | M 12 | Pink | 42H | 55.9 | 31.8 | 19.1 | 3.3 | 13.2 | 12.7 | 3.062 | 10 |
| 54160 | 2/0 AWG | 67 | 1/2 | M 12 | Black | 45 | 57.2 | 31.8 | 21.1 | 3.3 | 14.5 | 12.7 | 3.334 | 10 |
| 54165-TB | 3/0 AWG | 85 | 1/2 | M 12 | Orange | 50 | 59.7 | 31.8 | 23.4 | 3.3 | 16.0 | 12.7 | 4.082 | 10 |
| 54170 | 4/0 AWG | 107 | 1/2 | M 12 | Violet | 54H | 63.5 | 31.8 | 26.2 | 3.6 | 17.8 | 12.7 | 5.171 | 10 |
| 54113 | 250 kcmil | 125 | 1/2 | M 12 | Yellow | 62 | 66.0 | 31.8 | 28.7 | 3.6 | 19.6 | 12.7 | 6.622 | 10 |
| 58165 | 4/0 Weld | – | 1/2 | M 12 | Yellow | 62 | 70.1 | 31.8 | 31.8 | 3.8 | 20.1 | 12.7 | 8.210 | 10 |
| 54114 | 300 kcmil | 150 | 1/2 | M 12 | White | 66 | 68.6 | 31.8 | 31.8 | 3.8 | 21.6 | 12.7 | 8.210 | 10 |
| 58171 | 300 Weld | – | 1/2 | M 12 | Red | 71H | 72.4 | 31.8 | 34.5 | 4.6 | 23.6 | 12.7 | 10.705 | 10 |
| 54183 | 350 kcmil | 175 | 5/8 | M 16 | Blue | 76 | 81.5 | 40.1 | 34.5 | 4.6 | 23.6 | 15.9 | 10.909 | 10 |
| 54185 | 400 kcmil | 200 | 5/8 | M 16 | Blue | 80 | 89.7 | 40.1 | 35.8 | 4.3 | 24.4 | 15.9 | 11.340 | 6 |
| 58177 | 400 Weld | – | 1/2 | M 12 | Black | 107H | 84.1 | 31.8 | 40.9 | 5.6 | 26.4 | 12.7 | 18.098 | 6 |
| 54187 | 500 kcmil | 250 | 5/8 | M 16 | Brown | 87H | 92.2 | 40.1 | 40.9 | 5.6 | 27.9 | 15.9 | 19.958 | 6 |
| 58180 | 500 Weld | – | 5/8 | M 16 | Green | 94H | 96.3 | 40.1 | 44.5 | 6.1 | 30.5 | 15.9 | 26.195 | 2 |
| 54120 | 600 kcmil | 300 | 5/8 | M 16 | – | – | 96.3 | 40.1 | 44.5 | 6.1 | 30.5 | 15.9 | 25.038 | 6 |
| 54122-TB | 700 kcmil | 350 | 5/8 | M 16 | Pink | 99H | 93.5 | 40.1 | 46.7 | 5.8 | 32.0 | 15.9 | 23.283 | 6 |
| 54123-TB | 750 kcmil | 375 | 5/8 | M 16 | Black | 107H | 98.3 | 40.1 | 49.3 | 6.9 | 33.8 | 15.9 | 31.661 | 6 |

For tooling see pages 350 to 353

This represents a small part of the Color-Keyed® range, please contact your Sales Office for additional product information

# Color-Keyed®

Two hole lugs for copper cable
Standard barrel
600 V to 35 kV applications




## Technical Information

| | |
|---|---|
| Material | High conductivity wrought copper |
| Plating | Electro tin plated |
| Metal barrel | Copper tube |
| Voltage | 600V to 35kV |
| Marking | Colour reference for die and cable size |

## Approvals

007222
004503

E9809

## Ordering Information

| Product Ref. | USA Cable size | Approx. European cable size [mm²] | Stud size USA | Stud size metric equivalent | Colour | Tooling die code | Dimensions A [mm] | B [mm] | C [mm] | D [mm] | E [mm] | F [mm] | H [mm] | Weight [kg/100] | Quantity [pieces] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 256-30695-1157 | # 8 AWG | 6 - 8 | 3/8 | M 8 | Red | 21 | 76.2 | 53.3 | 14.2 | 1.5 | 6.6 | 9.5 | 25.4 | 1.361 | 10 |
| 256-30695-1158 | # 6 AWG | 10 - 13 | 3/8 | M 8 | Blue | 24 | 74.4 | 49.0 | 15.0 | 1.5 | 7.6 | 9.5 | 25.4 | 1.588 | 50 |
| 256-30695-1159 | # 4 AWG | 20 - 25 | 3/8 | M 8 | Grey | 27 | 79.5 | 50.3 | 15.0 | 2.3 | 9.4 | 9.5 | 25.4 | 2.177 | 10 |
| 54811 BE | # 3-2 AWG | 25 - 35 | 1/2 | M 12 | Brown | 29 | 108.7 | 76.2 | 22.4 | 2.8 | 10.4 | 12.7 | 44.5 | 6.577 | 10 |
| 54857 BE | # 1 AWG | 40 | 1/2 | M 12 | Green | 33 | 112.5 | 76.2 | 22.4 | 2.8 | 11.9 | 12.7 | 44.5 | 7.348 | 10 |
| 256-30695-593 | 1/0 AWG | 50 | 1/2 | M 12 | Pink | 37 | 110.0 | 76.2 | 19.1 | 3.3 | 13.2 | 15.9 | 44.5 | 5.897 | 5 |
| 54862 BE | 2/0 AWG | 70 | 1/2 | M 12 | Black | 42H | 106.7 | 71.4 | 21.1 | 3.3 | 14.5 | 12.7 | 44.5 | 6.124 | 10 |
| 54864 BE | 3/0 AWG | 80 - 95 | 1/2 | M 12 | Orange | 45 | 113.8 | 76.2 | 23.9 | 3.3 | 16.0 | 12.7 | 44.5 | 7.802 | 10 |
| 54866 BE | 4/0 AWG | 100 - 120 | 1/2 | M 12 | Violet | 50 | 119.4 | 76.2 | 26.2 | 3.6 | 17.8 | 12.7 | 44.5 | 10.024 | 10 |
| 54868 BE | 250 kcmil | 125 | 1/2 | M 12 | Yellow | 54H | 125.0 | 76.2 | 28.7 | 3.6 | 19.6 | 12.7 | 44.5 | 11.567 | 10 |
| 54870 BE | 300 kcmil | 150 | 1/2 | M 12 | White | 66 | 132.8 | 76.2 | 31.8 | 3.8 | 21.6 | 12.7 | 44.5 | 15.377 | 10 |
| 54872 BE | 350 kcmil | 170 - 185 | 1/2 | M 12 | Red | 71H | 137.2 | 76.2 | 34.5 | 4.6 | 23.6 | 12.7 | 44.5 | 18.915 | 10 |
| 54874 BE | 400 kcmil | 200 | 1/2 | M 12 | Blue | 76/80 | 140.0 | 76.2 | 35.8 | 4.3 | 24.4 | 12.7 | 44.5 | 20.502 | 6 |
| 54876 BE | 500 kcmil | 250 | 1/2 | M 12 | Brown | 87H | 152.4 | 76.2 | 40.9 | 5.6 | 27.9 | 12.7 | 44.5 | 31.797 | 6 |
| 54878 BE | 600 kcmil | 300 | 1/2 | M 12 | Green | 94H | 148.1 | 76.2 | 44.5 | 6.1 | 30.5 | 12.7 | 44.5 | 37.798 | 6 |
| 54880 BE | 750 kcmil | 400 | 1/2 | M 12 | Black | 106H | 157.5 | 76.2 | 49.3 | 6.9 | 33.8 | 12.7 | 44.5 | 47.854 | 6 |

For tooling see pages 350 to 353

This represents a small part of the Color-Keyed® range, please contact your Sales Office for additional product information

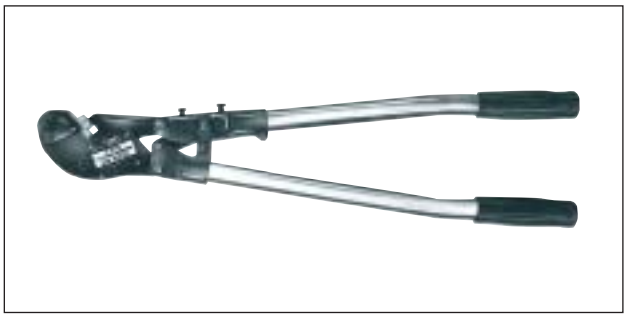
# 5.2 Color-Keyed®

## Standard hand tool

### Product Ref.: TBM25S

- Fixed die tool, with rotating head and 5 nests
- For **Color-Keyed® copper tube lugs** and **splices** from: 6 to 35 mm²
- **Shure-Stake™ mechanism**
- Length: 220 mm
- Weight: 430 g

## Large hand tools



### Product Ref.: TBM5S

- Large hand tool with interchangeable dies
- For **Color-Keyed® copper tube lugs** and **splices** from: 8 AWG to 250 kcmil (=8.4 to 126.7 mm² ) in the case of copper cables
- Incorporates the **Shure-Stake™ mechanism:** once the pressing has commenced, the tool can be re-opened only after successful completion of the crimping cycle, ensuring a correct crimp every time
- Furnished complete with carrying case and 5 installing dies (Product Ref. 13454, 13455, 13456, 13457, 13458)
- Dies are colour-coded and die-code embossed
- Tool length: 650 mm approx.
- Tool weight: 3kg approx.
- For die selection see table below

### Product Ref.: TBM5

- Same specifications as Product Ref. TBM5S but does not incorporate the **Shure-Stake™ mechanism**

### Dies for TBM5 and TBM5S

- Multi-nest dies, to cover a wire size range from: 8 AWG to 250 kcmil (=8.4 to 126.7 mm² ) in the case of copper cables
- Each nest is colour-coded and die-code embossed

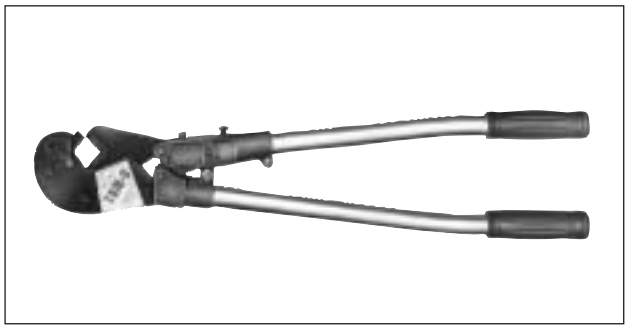
## Ordering Information: dies for TBM5 and TBM5S

| Die Product Ref. | Nest identification colour-code | Nest identification die-code | Copper wire size USA | Copper wire size conversion to metric cross-section [mm²] |
|---|---|---|---|---|
| 13454 | red | 21 | 8 AWG | 8.4 |
| | blue | 24 | 6 AWG | 13.3 |
| | grey | 29 | 4 AWG | 21.1 |
| | brown | 33 | 2 AWG | 33.6 |
| 13455 | green | 37 | 1AWG | 42.4 |
| | prink | 42H | 1/0 AWG | 53.5 |
| | black | 45 | 2/0 AWG | 57.4 |
| | orange | 50 | 3/0 AWG | 85.0 |
| 13456 | violet | 54H | 4/0 AWG | 107.2 |
| | yellow | 60 | 250 kcmil | 126.7 |

Note: 2 other dies (Product Ref. 13457 and Product Ref. 13458) are available, but for aluminium wire sizes only

## Product Ref.: TBM8S

- Large hand tool with interchangeable dies
- For **Color-Keyed® copper tube lugs** and **splices** from: 8 AWG to 500 kcmil (=8.4 to 253.4 mm² ) in the case of copper cables
- Incorporates the **Shure-Stake™ mechanism:** once the pressing has commenced, the tool can be re-opened only after successful completion of the crimping cycle, ensuring a correct crimp every time
- Furnished complete with carrying case and 8 installing dies (Product ref. 13461, 13462, 13463, 13463, 13464,13465, 13466, 13467, 13468)
- Dies are colour-coded and die-code embossed
- Tool length: 650 mm
- Weight: 9.3 kg
- For die selection see table below



## Product Ref.: TBM8

- Same specifications as Product Ref. TBM8S but does not incorporate the **Shure-Stake™ mechanism**

## Dies for TBM8 and TBM8S

- Multi-nest dies, to cover a wire size range from: 8 AWG to 500 kcmil (=8.4 to 253.4 mm² ) in the case of copper cables
- Each nest is colour-coded and die-code embossed

## Ordering Information: dies for TBM8 and TBM8S

| Die Product Ref. | Nest identification colour-code | Nest identification die-code | Copper wire size USA | Copper wire size conversion to metric cross-section [mm²] |
|---|---|---|---|---|
| 13461 | red | 21 | 8 AWG | 8.4 |
| | blue | 24 | 6 AWG | 13.3 |
| | grey | 29 | 4 AWG | 21.1 |
| | brown | 33 | 2 AWG | 33.6 |
| 13462 | green | 37 | 1AWG | 42.4 |
| | prink | 42H | 1/0 AWG | 53.5 |
| | black | 45 | 2/0 AWG | 57.4 |
| | orange | 50 | 3/0 AWG | 85.0 |
| 13463 | violet | 54H | 4/0 AWG | 107.2 |
| | yellow | 60 | 250 kcmil | 126.7 |
| 13465 | white | 66 | 300 kcmil | 152.0 |
| 13466 | red | 71H | 350 kcmil | 177.3 |
| 13467 | blue | 76 | 400 kcmil | 202.7 |
| 13468 | brown | 87H | 500 kcmil | 253.4 |

Note: 1 other die (Product Ref. 13464) is available, but for aluminium wire sizes only

# 5.2 Color-Keyed®

## Hydraulic hand tool

### Product Ref.: TBM14M

- Self-contained hydraulic tool with colour-coded interchangeable dies
- For **Color-Keyed® copper tube lugs** and **splices** from: 6 to 450 mm²
- Incorporates the **Shure-Stake™ mechanism:** once the pressing has commenced, the tool can be re-opened only after successful completion of the crimping cycle, ensuring a correct crimp every time
- Swivelled "C"- shaped head rotates 180°
- Complete with carrying case
- Weight: 6.8kg
- Output pressure: 14 ton
- For die selection see table page 353

## Hydraulic tool head

### Product Ref.: TBM15i

- Hydraulic tool head with interchangeable dies
- For **Color-Keyed® copper tube lugs** and **splices** from: 6 to 500 mm²
- New longer, slimmer profile allows easier access into tight spaces
- Wider jaw opening eases crimping of larger connectors
- Available with an insulated head
- Supplied in a carrying case in steel
- Dies to be ordered separately
- Output Force: 15 tons (nominal)
- Operating Pressure: 10,000 psi (nominal) = 690 bar
- Tool weight: 7 kg (without dies)
- For die selection see table page 353

## Smart tools

- The new SMART tools are designed to give you a uniform high quality compression connection over a wide connector range
- It easily installs copper and aluminium lugs from 6 mm² to 400 mm² without changing dies
- With its built-in intelligence, the tool will sense the barrel diameter and apply the correct amount of compression force
- Die selection mistakes are virtually eliminated
- The tool embosses a T&B mark on the connector for positive verification that the correct tool was used
- Tools are made from forged steel, suited to bench or fieldwork. Their "C"-shaped heads, light weight and compact size make them easy to use in almost any application

### Product Ref.: TBM8-750

- Hydraulic remote tool head
- For **aluminium** and **copper lugs** from the Color-Keyed® line from 6 to 400 mm²
- Operates on standard 10,000 psi (= 690 bar) hydraulic pumps
- Length: 368 mm
- Weight: 4kg
- Output pressure: 12 ton
- Coupler: Pioneer, female

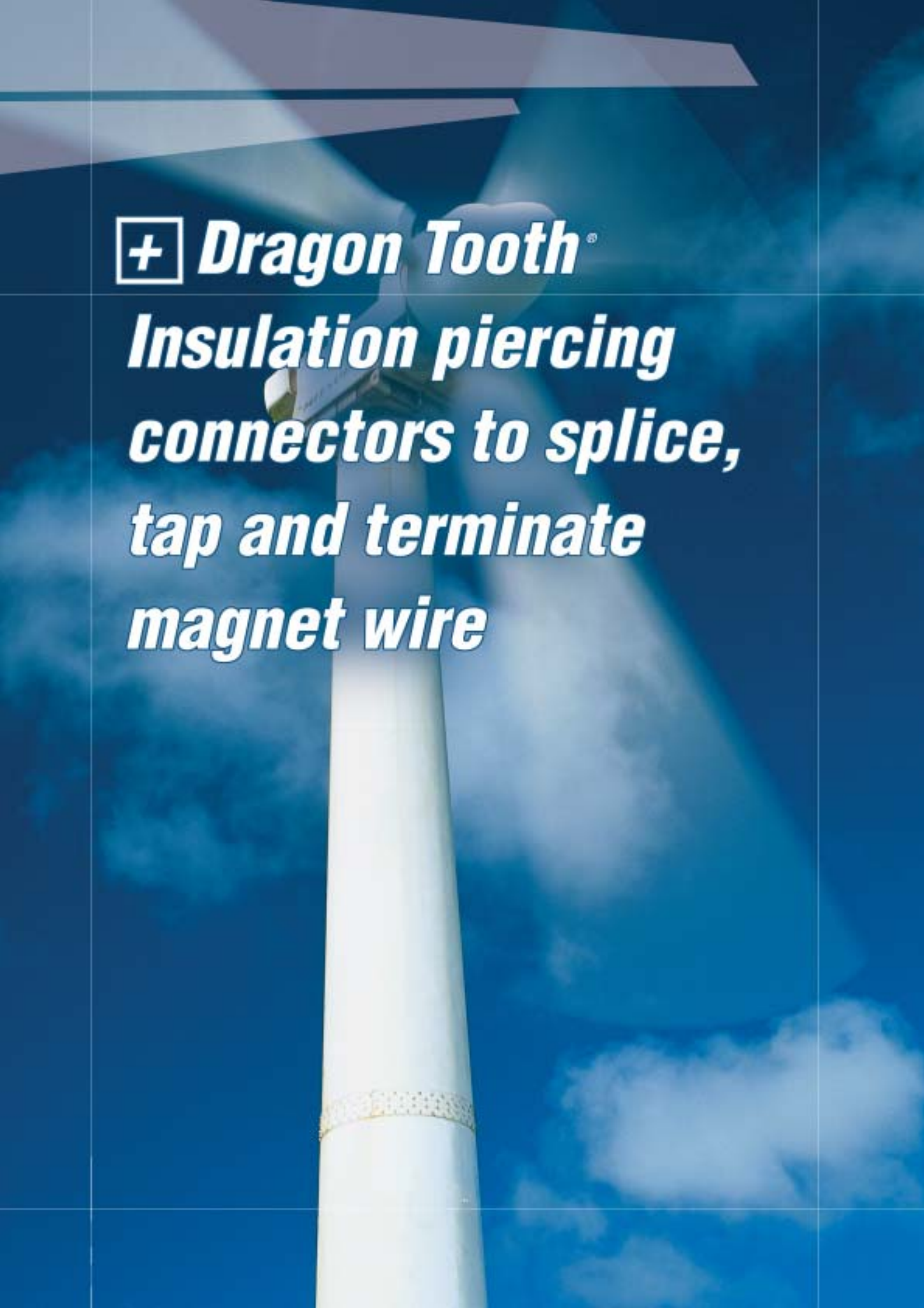
## Product Ref.: TBM8-750M-1

- Self-contained hydraulic tool
- For **aluminium** and **copper lugs** from the Color-Keyed® line from 6 to 400 mm²
- Length: 538 mm
- Weight: 5.9kg
- Output pressure: 12 ton
- Operating pressure: 9800 psi = 676 bar

## Tool die selection chart

| Copper wire size USA | Conversion to metric cross-section [mm²] | Connector colour-code | Connector die-code | TBM8 TBM8S die product references | TBM5 TBM5S die product references | TBM14M TBM15i die product references |
|---|---|---|---|---|---|---|
| 8 AWG | 8.4 | red | 21 | 13461 | 13454 | 15520 |
| 6 AWG | 13.3 | blue | 24 | 13461 | 13454 | 15522 |
| 4 AWG | 21.1 | grey | 29 | 13461 | 13454 | 15527CK |
| 2 AWG | 33.6 | brown | 33 | 13461 | 13454 | 15528 |
| 1 AWG | 42.4 | green | 37 | 13462 | 13455 | 15513CK |
| 1/0 AWG | 53.5 | pink | 42H | 13462 | 13455 | 15508 |
| 2/0 AWG | 57.4 | black | 45 | 13462 | 13455 | 15526 |
| 3/0 AWG | 85.0 | orange | 50 | 13462 | 13455 | 15530 |
| 4/0 AWG | 107.2 | violet | 54H | 13463 | 13456 | 15511 |
| 250 kcmil | 126.7 | yellow | 60 | 13463 | 13456 | 15510CK |
| 300 kcmil | 152.0 | white | 66 | 13465 | | 15543 |
| 350 kcmil | 177.3 | red | 71H | 13466 | | 15514CK |
| 400 kcmil | 202.7 | blue | 76 | 13467 | | 15512 |
| 500 kcmil | 253.4 | brown | 87H | 13468 | | 15506 |
| 600 kcmil | 304.0 | green | 94H | | | 15611 |
| 700 kcmil | 354.7 | pink | 99H | | | 15505 |
| 750 kcmil | 380.0 | black | 106H | | | 15515CK |
| 1000 kcmil | 506.7 | – | 125H | | | 15603 |
| 1500 kcmil | 760.1 | – | | | | |
| 2000 kcmil | 1013.4 | black | | | | |

Note: This table is based on sizes of copper cable. In the case of aluminium cables, the correspondence between the cable size and the connector colour code (and therefore the appropriate die) may be different. Please contact your Sales Office for more information on the different possibilities of applications.



# Dragon Tooth®

# Insulation piercing connectors to splice, tap and terminate magnet wire

## 5. Termination systems

# 5.3 Dragon Tooth®

## Overview

### Magnet wire termination

The tough, high temperature insulation on magnet wire used by electrical motor and transformer manufacturers creates problems in splicing and terminating. The durability of magnet wire insulation has made dip-soldering or brazing extremely difficult without stripping the insulation.

Another splicing and terminating challenge involves the use of aluminium for magnet applications. A manufacturer connecting aluminium magnet wire to copper is faced with the problem of the different coefficients of thermal expansion of the two metals, galvanic corrosion, cold flow and the rapid formation of oxide film on the wire surface.

In the conventional methods, different techniques are used to remove the insulating varnish:

- scratching
- brushing
- burning-off
- dissolving

These methods are all costly and time consuming, and they generally lead to a risk of damage to the conductors and to a risk of injury of the operator. Health and environmental considerations can also be an issue.

### The solution from Thomas & Betts: Dragon Tooth®, the insulation piercing connector

Thomas & Betts offer a solution for a highly reliable connection method for magnet wire, which eliminates welding, no longer requires removal of insulation and which can be installed in seconds. No special operator skills are needed.

The connector and matching tooling do the entire job. To meet the essential requirements of magnet wire connections, Thomas & Betts offer the insulation piercing Dragon Tooth® compression connector.

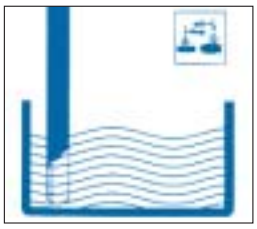
Dragon Tooth® magnet wire Connectors penetrate the insulation and oxide layers to make electrical contact on magnet wiring, eliminating the need for stripping, brazing, welding or other methods of joining magnet wire.

The result is a gas-tight, permanent connection with an exceptionally low contact resistance, capable of maintaining contact integrity throughout the life of the connection.

Scratching

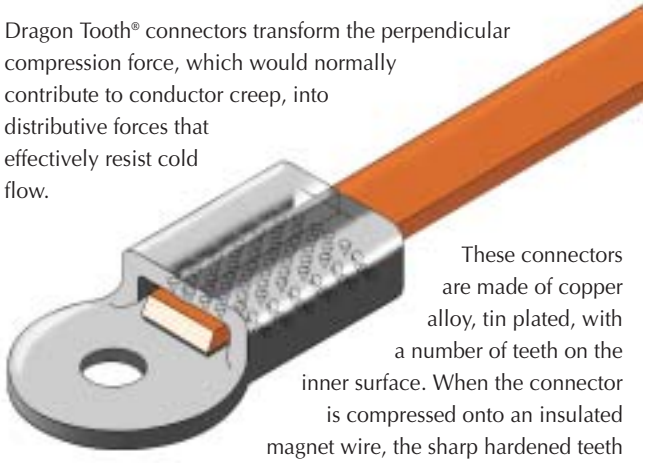
Brushing

Burning-off



Dissolving

Dragon Tooth® connectors transform the perpendicular compression force, which would normally contribute to conductor creep, into distributive forces that effectively resist cold flow.



These connectors are made of copper alloy, tin plated, with a number of teeth on the inner surface. When the connector is compressed onto an insulated magnet wire, the sharp hardened teeth penetrate the insulation and the oxide and bite into the conductor. An electrically sound, low-resistance connection is established as a result of the combination of high pressures at the tip and edges of the teeth and the sliding action between the teeth and the conductor

# Dragon Tooth®

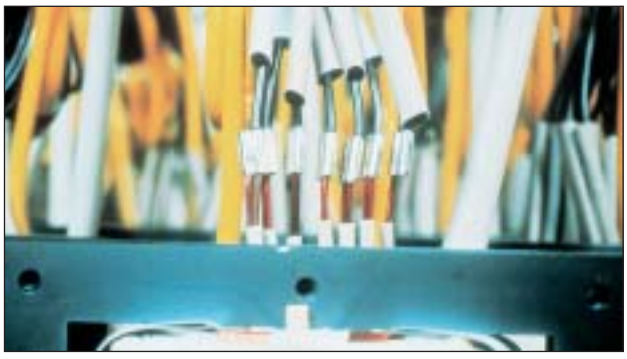
## Insulation piercing connectors



### Dragon Tooth®: main features & typical applications

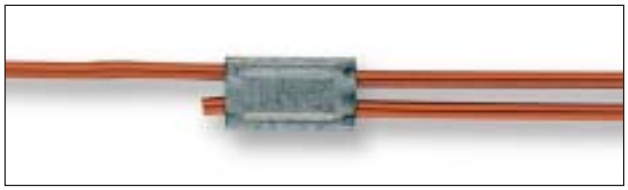
Thomas & Betts Dragon Tooth® connectors and installing tools are designed to splice, tap and terminate copper magnet wire from 32 AWG to 460,000 CMA (0,03 to 230 mm²) and aluminium magnet wire from 20 AWG to 460,000 CMA (0,5 to 230 mm²) in motor and transformer applications.

- Can be installed in seconds
- Requires minimal training for installation.
- Made of copper alloy, tin plated, with a number of teeth on the inner surface
- Splices and taps have an open side permitting easy access to wire and makes internal coil tapping possible (mid-span tapping and splicing)
- For aluminium to copper, aluminium to aluminium, or copper to copper magnet wire connections
- Ring terminals with bolt holes to accommodate M3 through M12 studs
- Male and female 6.35 mm x 0.8 mm disconnects
- Splices and fork terminals accommodate wire sizes 24 AWG (0.21 mm²) to 12 AWG (3.3 mm²) in a variety of combinations, including combining magnet wire with stripped wire lead. For solid or stranded wire 20 AWG (0.52 mm²) to 4/0 AWG (107.2 mm²)
- Larger connectors accommodate circular mil range from 50,000 to 460,000 CMA (25 to 230 mm²)
- Transition washers with teeth to penetrate aluminium and copper oxides, enabling copper to aluminium connections to be made in a bolted joint without the use of inhibiting compounds
  Transition washers also accommodate the difference in thermal expansion between copper and aluminium, and enhance the efficiency of bolted grounding connections
- Connector and matching tooling do the entire job

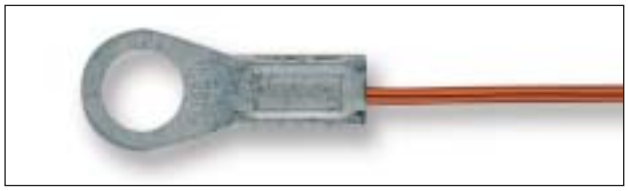


Splice

Parallel Splice



Tap



Termination

### How to Select a Connector

1. Define the cross-section of the conductors (see formula on next page) and in the Ordering Information tables, refer to either Round Wire column, or Rectangular column, depending on the type you are using, and check any limitations, (such as max. wire i.e. width/height). If there are limitations, you may have to make a selection from next larger size.
2. Refer to table on page 360 for lead wire to magnet wire applications, to table on page 361 for magnet wire to magnet wire applications for the series 22L00X and 22000X.
3. Once the connector is defined, the appropriate tool and die for the application can be selected in the selection chart on pages 380 and 381.

## Formula for calculating circular mil area (CMA)

For square or rectangular wire: CMA = Thickness (inch) x Width (inch) x 1.273E6
= Thickness (mm) x Width (mm) x 1.973E3
For round wire: CMA = (Diameter (inch))$^2$ x 1E6
= (Diameter (mm))$^2$ x 1.55E3

See table below for values

## Unit conversion table: AWG round wire size to diameter and cross-section

| Wire size AWG | Nominal diameter [inch] | Nominal diameter [mm] | Cross-section [mm$^2$] | CMA circular mils [cmil] |
|---|---|---|---|---|
| 4/0 | 0.4600 | 11.684 | 107.219 | 211600 |
| 3/0 | 0.4096 | 10.404 | 85.011 | 167800 |
| 2/0 | 0.3648 | 8.547 | 67.432 | 133100 |
| 1/0 | 0.3249 | 8.252 | 53.488 | 105600 |
| 1 | 0.2893 | 7.348 | 42.409 | 83690 |
| 2 | 0.2576 | 6.543 | 33.624 | 66360 |
| 3 | 0.2294 | 5.827 | 26.655 | 52620 |
| 4 | 0.2043 | 5.189 | 21.149 | 41740 |
| 5 | 0.1819 | 4.620 | 16.766 | 33090 |
| 6 | 0.1620 | 4.115 | 13.289 | 26240 |
| 7 | 0.1443 | 3.665 | 10.551 | 20820 |
| 8 | 0.1285 | 3.264 | 8.387 | 16510 |
| 9 | 0.1144 | 2.906 | 6.632 | 13090 |
| 10 | 0.1019 | 2.588 | 5.262 | 10380 |
| 11 | 0.0907 | 2.304 | 4.168 | 8230 |
| 12 | 0.0808 | 2.052 | 3.308 | 6530 |
| 13 | 0.0720 | 1.829 | 2.627 | 5180 |
| 14 | 0.0641 | 1.628 | 2.082 | 4110 |

| Wire size AWG | Nominal diameter [inch] | Nominal diameter [mm] | Cross-section [mm$^2$] | CMA circular mils [cmil] |
|---|---|---|---|---|
| 15 | 0.0571 | 1.450 | 1.652 | 3260 |
| 16 | 0.0508 | 1.290 | 1.308 | 2580 |
| 17 | 0.0453 | 1.151 | 1.040 | 2050 |
| 18 | 0.0403 | 1.024 | 0.823 | 1620 |
| 19 | 0.0359 | 0.912 | 0.653 | 1290 |
| 20 | 0.0320 | 0.813 | 0.519 | 1020 |
| 21 | 0.0285 | 0.724 | 0.412 | 812 |
| 22 | 0.0253 | 0.643 | 0.324 | 640 |
| 23 | 0.0226 | 0.574 | 0.259 | 511 |
| 24 | 0.0201 | 0.511 | 0.205 | 404 |
| 25 | 0.0179 | 0.455 | 0.162 | 320 |
| 26 | 0.0159 | 0.404 | 0.128 | 253 |
| 27 | 0.0142 | 0.316 | 0.104 | 202 |
| 28 | 0.0126 | 0.320 | 0.080 | 159 |
| 29 | 0.0113 | 0.287 | 0.065 | 128 |
| 30 | 0.0100 | 0.254 | 0.051 | 100 |
| 31 | 0.0089 | 0.226 | 0.040 | 79 |
| 32 | 0.0080 | 0.203 | 0.032 | 64 |

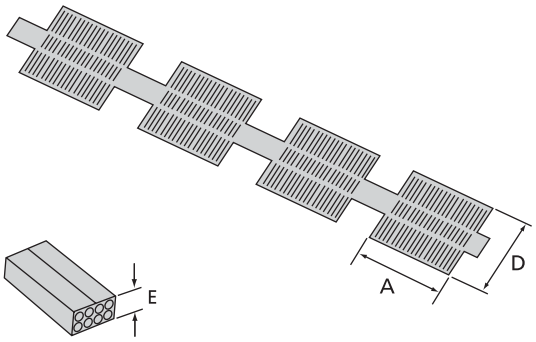
Note: 1 kcmil = 1000 cmil

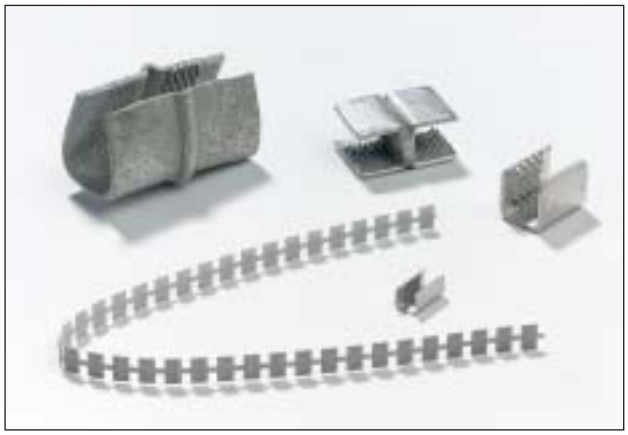
## Unit conversion table: American bolt sizes

| US Bolt size | Min. hole diameter [mm] | [inch] | Matching bolt in metric size |
|---|---|---|---|
| 2 | 2.337 | 0.092 | M2 |
| 4 | 2.946 | 0.116 | M2.5 |
| 6 | 3.632 | 0.143 | M3 |
| 8 | 4.292 | 0.169 | M4 |
| 10 | 4.978 | 0.196 | M4 |
| 1/4 | 6.655 | 0.262 | M6 |
| 5/16 | 8.204 | 0.323 | M8 |
| 3/8 | 9.855 | 0.388 | M8 |
| 7/16 | 11.506 | 0.453 | M10 |
| 1/2 | 13.106 | 0.516 | M12 |
| 5/8 | 16.510 | 0.650 | M16 |
| 3/4 | 19.685 | 0.775 | M18 |

# Dragon Tooth®

## Splices



## Approvals

E9809

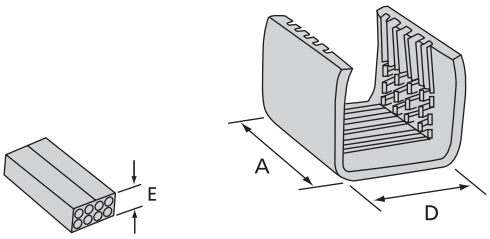
## Ordering Information

| Product Ref. | Dimensions | | | Combined wire size | Round wire range | Rectangular wire range | | Tooling |
|---|---|---|---|---|---|---|---|---|
| | A | D | E* | | min - max | wire thickness min - max | wire width min - max | |
| | [mm] | [mm] | [mm] | [mm²] | [mm] | [mm] | [mm] | |
| 220004 | 4.7 | 2.8 | 0.8 | 0.23 - 0.87 | 0.20 - 1.00** | – | – | 13676A |
| 220001 | 8.7 | 4.4 | 2.4 | 0.64 - 3.30 | 0.40 - 1.45** | 0.60 - 1.00 | 0.60 - 2.30 | 13678 |
| 220006 | 11.9 | 6.4 | 2.4 | 1.30 - 6.24 | 1.30 - 2.05 | 1.30 - 2.05 | 1.30 - 4.10 | 13696 |
| 220002-TB | 8.7 | 6.4 | 2.4 | 1.00 - 3.30 | 0.50 - 1.40** | 0.50 - 1.00 | 0.50 - 2.30 | 13679 |

* Reference dimension (crimped height): see installing die illustration for gauging

** Not recommended for aluminium magnet wire finer than 0.4 mm²

See pages 374 to 381 for tooling specifications




## Approvals

E9809

## Ordering Information

| Product Ref. | Dimensions | | | Combined wire size | Round wire range | Rectangular wire range | | Tooling | |
|---|---|---|---|---|---|---|---|---|---|
| | A | D | E* | | min - max | wire thickness min - max | wire width min - max | Hand tool | Power tool*** |
| | [mm] | [mm] | [mm] | [mm²] | [mm] | [mm] | [mm] | | |
| 22L004 | 3.8 | 2.8 | 1.3 | 0.23 - 0.87 | 0.20 - 1.00** | – | – | ERG1804 | 11903A |
| 22L001 | 8.1 | 4.1 | 2.5 | 0.20 - 2.10 | 0.50 - 1.45** | 0.50 - 1.25 | 0.50 - 2.50 | ERG1801 | 11904A |
| 22L002 | 8.1 | 6.4 | 2.5 | 1.00 - 3.30 | 0.50 - 1.40** | 0.50 - 1.25 | 0.50 - 2.80 | ERG1802 | 13500 |
| 22L006 | 11.5 | 6.4 | 3.3 | 1.30 - 6.24 | 1.30 - 2.05 | 1.30 - 1.50 | 1.30 - 4.10 | ERG1806 | |
| 22L008 | 17.8 | 12.7 | 3.8 | 6.50 - 15.50 | 1.00 - 1.30 | 1.00 - 1.60 | 1.60 - 9.53 | – | 13100A, 13400 |
| 22L009 | 17.8 | 14 | 5.6 | 18.30 - 43.60 | 1.30 - 2.58 | 2.00 - 4.60 | 2.00 - 9.50 | – | TBM15i |

* Reference dimension (crimped height): see installing die illustration for gauging

** Not recommended for aluminium magnet wire finer than 0.4 mm²

*** Use selection chart to determine appropriate die set (pages 380 and 381)

See pages 374 to 381 for tooling specifications

# 5.3 Dragon Tooth®

## Splice selection guide

For lead wire to magnet wire applications

For 22L00X and 22000X series terminals

| Magnet wire size | Lead wire size | | | | | |
|---|---|---|---|---|---|---|
| | **3.3** [mm²] | **2** [mm²] | **1.5** [mm²] | **1** [mm²] | **0.5** [mm²] | **0.3 – 0.2** [mm²] |
| 2 – 1.5 mm² | 220006 | 220006 | 220006 | – | – | – |
| | 22L006 | 22L006 | 22L006 | | | |
| 1.3 mm² | | 220002 | 22L001 | 22L001 | 22L001 | |
| | 220006 | 22L002 | 220002 | | | |
| | 22L006 | 220006 | 22L002 | | | – |
| | | 22L006 | 220006 | | | |
| | | | 22L006 | | | |
| 1.0 mm² | 22L006 | 22L002 | 22L001 | 220001 | 220001 | – |
| | | | 22L001 | 22L001 | | |
| 0.8 – 0.3 mm² | 22L002 | 220002 | 220001 | 220001 | 220001 | |
| | | 22L002 | 22L001 | 22L001 | 22L001 | – |
| | | | 220002 | | | |
| | | | 22L002 | | | |
| 0.2 mm² | 22L002 | 220002 | 220001 | 220001 | 220001 | 220004 |
| | | 22L002 | 22L001 | 22L001 | 22L001 | 22L004 |
| | | | 220002 | 22L004 | 220004 | |
| | | | 22L002 | | 22L004 | |
| 0.12 mm² | – | – | 22L001 | 22L001 | 22L001 | 220004 |
| | | | | 22L004 | 220004 | 22L004 |
| | | | | | 22L004 | |
| 0.08 mm² | Not recommended for aluminium | | – | 22L004 | 220004 | 220004 |
| | Magnet Wire finer than 0.5 mm² | | | 22L004 | 22L004 | |
| 0.05 mm² | – | – | – | 220004 | 220004 | 220004 |
| | | | | 22L004 | 22L004 | 22L004 |
| 0.03 mm² | – | – | – | 22L004 | 22L004 | 22L004 |

# Dragon Tooth®

## Splice selection guide

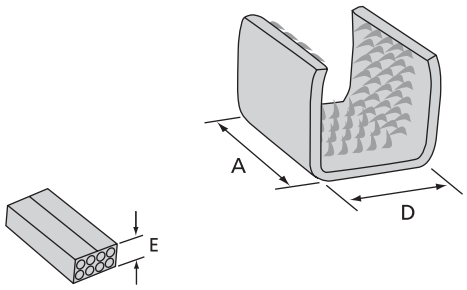
## For magnet wire to magnet wire applications

## For 22L00X and 22000X series terminals

| Magnet wire size | Wires per Connection | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 10 | 12 | 14 | 16 | 20 | 24 |
| 16 mm² | 22L009 | | 22L009H | | | | | | | | | | |
| 5 mm² | | | | | 22L009 | | | | 22L009H | | | | |
| 3.3 mm² | | | | | | | 22L009 | | | | 22L00H | | |
| 2 mm² | 220006 | 220006 | | 22L008 | | | | 22L009 | | | | | |
| | 22L00 | 22L006 | | | | | | | | | | | |
| 1.5 mm² | 22L002 | 220006 | | | | | | | | | | | |
| | 220009 | 22L006 | | | | | | | | | | | |
| | 22L009 | | | | | | | | | | | | |
| 1.3 mm² | 22L002 | 220006 | 220009 | | | 22L008 | | | | 22L009 | | 22L009H | 22L009H |
| | 220006 | 22L006 | 22L006 | | | | | | | | | | |
| | 22L006 | | | | | | | | | | | | |
| 1.0 mm² | 22L001 | 22L002 | | | | | | | | | | | |
| | 22L002 | | | | | | | | | | | | |
| 0.8 mm² | 22L001 | 22L002 | 22L002 | | | | 22L008 | | | | | | |
| | 22L002 | | | | | | | | | | | | |
| 0.6 mm² | 22L001 | 22L002 | 22L002 | 22L002 | | | | | Not recommended for aluminium | | | | |
| | 22L002 | | | | | | | | Magnet Wire finer than 0.5 mm² | | | | |
| 0.5 mm² | 22L001 | 22L001 | 22L002 | 22L002 | 22L002 | | | | | | | | |
| | 22L002 | 22L002 | | | | | | | | | | | |
| 0.4 - 0.3 mm² | 22L001 | 22L001 | 22L001 | | | | | | | | | | |
| 0.25 mm² | 22L001 | 22L001 | 22L001 | 22L001 | | | | | | | | | |
| 0.2 mm² | 22L004 | 22L001 | 22L001 | 22L001 | 22L001 | | | | | | | | |
| | 22L001 | | | | | | | | | | | | |
| 0.12 mm² | 22L004 | 22L004 | | | | | | | | | | | |
| 0.08 mm² | 22L004 | 22L004 | 22L004 | | | | | | | | | | |
| 0.05 mm² | 22L004 | 22L004 | 22L004 | 22L004 | | | | | | | | | |
| 0.03 mm² | 22L004 | 22L004 | 22L004 | 22L004 | 22L004 | | | | | | | | |

# Dragon Tooth®

## Splices




## Approvals

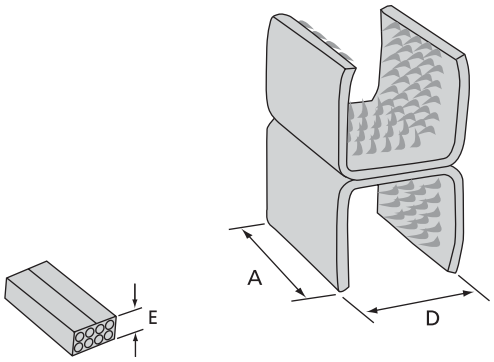
E9809

## Ordering Information

| Product Ref. | Dimensions | | | Combined | Round | Rectangular wire range | | Tooling |
|---|---|---|---|---|---|---|---|---|
| | A | D | E* | wire size | wire range min - max | wire thickness min - max | wire width min - max | |
| | [mm] | [mm] | [mm] | [mm²] | [mm] | [mm] | [mm] | |
| 210214S | 15.9 | 9.5 | 4.3 | 2.00 - 10.52 | 1.63 (a) - 2.58 | 2.00 - 2.30 | 2.00 - 4.57 | 13100A, 13400 |
| 204210S | 17.5 | 13.5 | 6.3 | 5.20 - 26.60 | 2.05 (b) - 6.54 (c) | 2.50 - 4.10 | 2.50 - 6.35 | TBM15i |

* Reference dimension (crimped height): see installing die illustration for gauging
Use selection chart to determine appropriate die set (see pages 380 and 381)
See pages 374 to 381 for tooling specifications

(a) Four wires max
(b) Six wires max
(c) Crimping dies may not bottom
Connector height will depend on number and sizes of wires in barrel
Pump must deliver 9800 PSI minimum




## Approvals

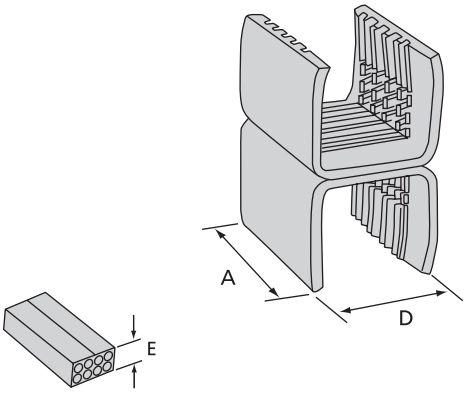
E9809

## Ordering Information

| Product Ref. | Dimensions | | | Combined | Round | Rectangular wire range | | Tooling |
|---|---|---|---|---|---|---|---|---|
| | A | D | E* | wire size | wire range min - max | wire thickness min - max | wire width min - max | |
| | [mm] | [mm] | [mm] | [mm²] | [mm] | [mm] | [mm] | |
| 204210SH | 17.5 | 13.5 | 11.9 | (5.20 - 26.60) x2 | 2.05 (a) - 6.5 (b) | 2.5 - 4.1 | 2.5 - 6.6 | 13100A, 13400 TBM15i |

* Reference dimension (crimped height): see installing die illustration for gauging
Use selection chart to determine appropriate die set (see pages 380 and 381)
See pages 374 to 381 for tooling specifications

(a) Six wires max each barrel
(b) Conductors larger than 13 mm² require special dies



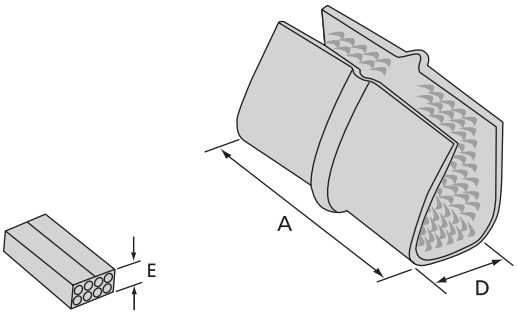

## Approvals

E9809

## Ordering Information

| Product Ref. | Dimensions A [mm] | D [mm] | E* [mm] | Combined wire size [mm²] | Round wire range min - max [mm] | Rectangular wire range wire thickness min - max [mm] | Rectangular wire range wire width min - max [mm] | Tooling |
|---|---|---|---|---|---|---|---|---|
| 22L009H | 17.8 | 13.8 | 9.7 | (18.25 - 33.5) x 2 | 1.3 - 4.6 | 2.0 - 4.5 | 2.0 - 9.7 | 13100A, 13400 TBM15i |

* Reference dimension (crimped height): see installing die illustration for gauging
Use selection chart to determine appropriate die set (see pages 380 and 381)
See pages 374 to 381 for tooling specifications




## Approvals

E9809

## Ordering Information

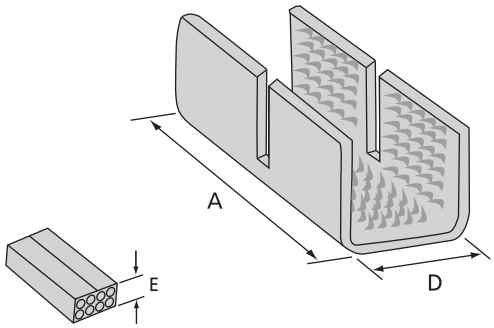
| Product Ref. | Dimensions A [mm] | D [mm] | E* [mm] | Combined wire size [mm²] | Rectangular wire range wire thickness min - max [mm] | Rectangular wire range wire width min - max [mm] | Tooling |
|---|---|---|---|---|---|---|---|
| 220015 | 38.1 | 22.5 | (a) | 25 - 58 | 2.5 - 4.4 | 7.6 - 15.9 | 13100A TBM15i |
| 220019** | 38.1 | 22.5 | (a) | 55 - 88 | 4.4 - 8.3 | 7.6 - 15.9 | |
| 220023 | 44.5 | 22.5 | (a) | 55 - 115 | 4.4 - 8.3 | 7.6 - 15.9 | |

* Reference dimension (crimped height): see installing die illustration for gauging
** Not UL recognised
Use selection chart to determine appropriate die set (see pages 380 and 381)
See pages 374 to 381 for tooling specifications

(a) Crimping dies may not bottom.
Connector height will depend on number and sizes of wires in barrel.
Pump must deliver 9.800 psi min.

# Dragon Tooth®

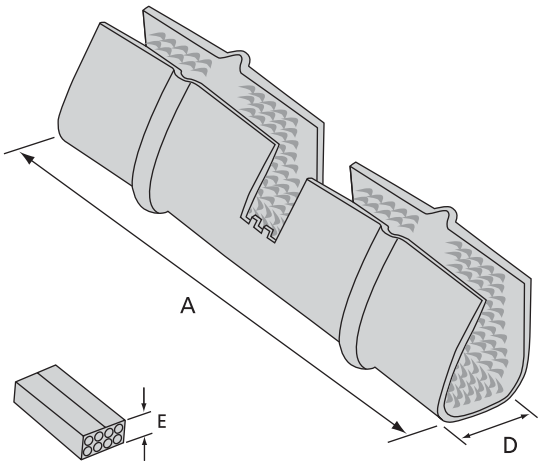
## Splices




## Ordering Information

| Product Ref. | Dimensions | | | Combined wire size | Round wire range min - max | Rectangular wire range | | Tooling |
|---|---|---|---|---|---|---|---|---|
| | A | D | E* | | | wire thickness min - max | wire width min - max | |
| | [mm] | [mm] | [mm] | [mm²] | [mm] | [mm] | [mm] | |
| 314118S | 16.0 | 9.7 | 3.3 | 1.65 - 6.25 | 1.45 - 1.83 | 1.27 - 1.52 | 1.27 - 4.57 | 13100A, 13400, TBM15i |

* Reference dimension (crimped height): see installing die illustration for gauging
Use selection chart to determine appropriate die set (see pages 380 and 381)
See pages 374 to 381 for tooling specifications




## Approvals

E9809

## Ordering Information

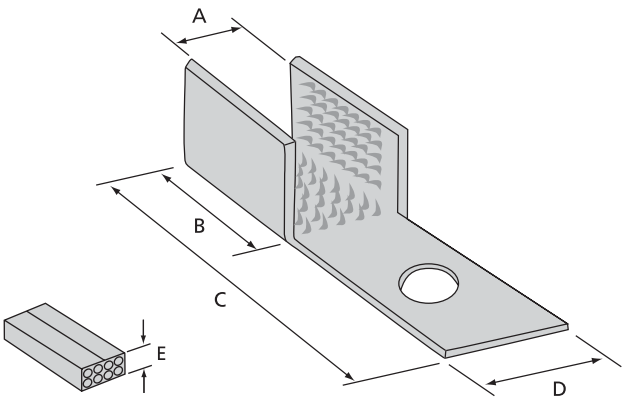
| Product Ref. | Dimensions | | | Combined wire size | Rectangular wire range | | Tooling |
|---|---|---|---|---|---|---|---|
| | A | D | E* | | wire thickness min - max | wire width min - max | |
| | [mm] | [mm] | [mm] | [mm²] | [mm] | [mm] | |
| 220016 | 79.5 | 22.5 | (a) | (25.0 - 58.0) x 2 | 2.5 - 4.4 | 7.6 - 15.9 | 13100A TBM15i |
| 220020 | 79.5 | 22.5 | (a) | (55.0 - 88.6) x 2 | 2.5 - 4.4 | 7.6 - 15.9 | |
| 220024 | 92.2 | 22.5 | (a) | (55.0 - 116.0) x 2 | 2.5 - 4.4 | 7.6 - 15.9 | |

* Reference dimension (crimped height): see installing die illustration for gauging
Use selection chart to determine appropriate die set (see pages 380 and 381)
See pages 374 to 381 for tooling specifications

(a) Crimping dies may not bottom
Connector height will depend on number and sizes of wires in barrel
Pump must deliver 9800 PSI minimum

# Dragon Tooth®

## Ring terminals




## Approvals

E9809

## Ordering Information

| Product Ref. | USA Stud size** | Dimensions A [mm] | B [mm] | C [mm] | D [mm] | E* [mm] | Combined wire size [mm²] | Round wire range min - max [mm] | Rectangular wire range thickness min - max [mm] | Rectangular wire range width min - max [mm] | Tooling |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 210219 | 8 | 9.5 | 14.3 | 31.0 | 10.3 | 4.3 | 2.1 - 10.5 | 1.63 (a) - 2.58 | 2.0 - 2.3 | 2.0 - 4.5 | |
| 210217 | 10 | 9.5 | 14.3 | 31.0 | 10.3 | 4.3 | 2.1 - 10.5 | 1.63 (a) - 2.58 | 2.0 - 2.3 | 2.0 - 4.5 | |
| 210216 | 1/4 | 9.5 | 14.3 | 31.0 | 10.3 | 4.3 | 2.1 - 10.5 | 1.63 (a) - 2.58 | 2.0 - 2.3 | 2.0 - 4.5 | 13100A |
| 204217 | 10 | 13.5 | 15.5 | 40.1 | 12.7 | 6.4 | 5.2 - 26.6 | 2.05 (b) - 6.5 (c) | 2.5 - 4.1 | 2.5 - 6.35 | 13400 |
| 204212 | 1/4 | 13.5 | 15.5 | 40.1 | 12.7 | 6.4 | 5.2 - 26.6 | 2.05 (b) - 6.5 (c) | 2.5 - 4.1 | 2.5 - 6.35 | TBM15i |
| 314125*** | 10 | 9.7 | 14.2 | 31.0 | 10.3 | 6.9 | 1.7 - 6.2 | 1.45 - 1.83 | 1.27 - 1.52 | 1.27 - 4.57 | |
| 314123*** | 1/4 | 9.7 | 14.2 | 35.7 | 10.3 | 6.9 | 1.7 - 6.2 | 1.45 - 1.83 | 1.27 - 1.52 | 1.27 - 4.57 | |

* Reference dimension (crimped height): see installing die illustration for gauging

** USA stud size: see page 358 for metric conversion

*** Not UL recognised

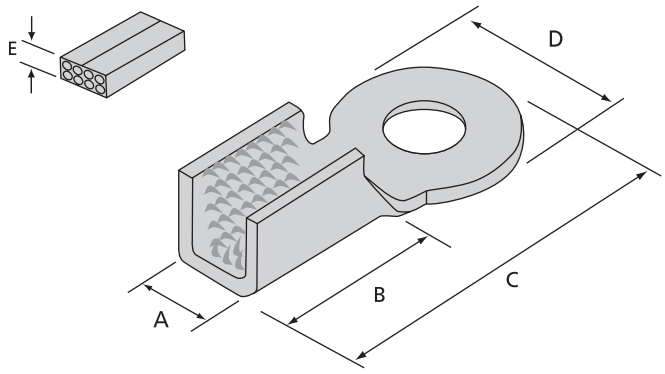
Use selection chart to determine appropriate die set (see pages 380 and 381)

See pages 374 to 381 for tooling specifications

(a) Four wires max

(b) Six wires max

(c) Conductors larger than 13 mm² require special dies




## Approvals

E9809

## Ordering Information

| Product Ref. | USA Stud size** | Dimensions A [mm] | B [mm] | C [mm] | D [mm] | E* [mm] | Combined wire size [mm²] | Round wire range min - max [mm] | Rectangular wire range Thickness min - max [mm] | Width min - max [mm] | Tooling |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 210214-1 | 1/4 | 9.5 | 14.3 | 35.7 | 17.5 | 4.3 | 2.0 - 10.5 | 1.6 (a) - 2.58 | 2.0 - 2.3 | 2.0 - 4.6 | |
| 210214-2 | 5/16 | 9.5 | 14.3 | 35.7 | 17.5 | 4.3 | 2.0 - 10.5 | 1.6 (a) - 2.58 | 2.0 - 2.3 | 2.0 - 4.6 | |
| 210214-3 | 3/8 | 9.5 | 14.3 | 35.7 | 17.5 | 4.3 | 2.0 - 10.5 | 1.6 (a) - 2.58 | 2.0 - 2.3 | 2.0 - 4.6 | 13100A |
| 204210-1 | 1/4 | 13.5 | 15.5 | 40.1 | 20.6 | 6.3 | 5.2 - 26.6 | 2.05 (b) - 6.5 (c) | 2.5 - 4.1 | 2.5 - 6.6 | 13400 |
| 204210-2 | 5/16 | 13.5 | 15.5 | 40.1 | 20.6 | 6.3 | 5.2 - 26.6 | 2.05 (b) - 6.5 (c) | 2.5 - 4.1 | 2.5 - 6.6 | TBM15i |
| 204210-3 | 3/8 | 13.5 | 15.5 | 40.1 | 20.6 | 6.3 | 5.2 - 26.6 | 2.05 (b) - 6.5 (c) | 2.5 - 4.1 | 2.5 - 6.6 | |
| 204210-5 | 1/2 | 13.5 | 15.5 | 40.1 | 20.6 | 6.3 | 5.2 - 26.6 | 2.05 (b) - 6.5 (c) | 2.5 - 4.1 | 2.5 - 6.6 | |

* Reference dimension (crimped height): see installing die illustration for gauging

** USA stud size: see page 358 for metric conversion

Use selection chart to determine appropriate die set (see pages 380 and 381)

See pages 374 to 381 for tooling specifications

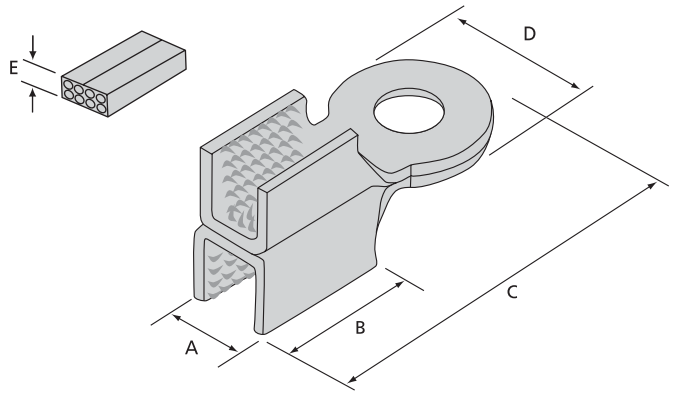
(a) Four wires max

(b) Six wires max

(c) Conductors larger than 13 mm² require special dies

# Dragon Tooth®

## Ring terminals




## Approvals

E9809

## Ordering Information

| Product Ref. | USA Stud size** | Dimensions A [mm] | B [mm] | C [mm] | D [mm] | E* [mm] | Combined wire size [mm²] | Round wire range min - max [mm] | Rectangular wire range Thickness min - max [mm] | Width min - max [mm] | Tooling |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 204210-1H | 1/4 | 13.5 | 15.5 | 40.1 | 20.6 | 11.9 | (5.2 - 26.6) x 2 | 2.05 (b) - 6.54 (c) | 2.5 - 4.1 | 2.5 - 6.6 | 13100A,13400 |
| 204210-3H | 3/8 | 13.5 | 15.5 | 40.1 | 20.6 | 11.9 | (5.2 - 26.6) x 2 | 2.05 (b) - 6.54 (c) | 2.5 - 4.1 | 2.5 - 6.6 | TBM15i |

* Reference dimension (crimped height): see installing die illustration for gauging

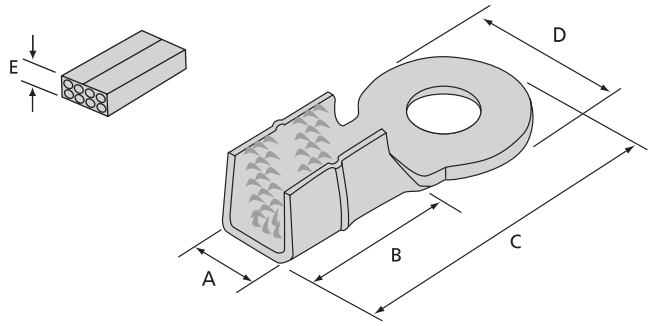
** USA stud size: see page 358 for metric conversion

Use selection chart to determine appropriate die set (see pages 380 and 381)

See pages 374 to 381 for tooling specifications

(b) Six wires max

(c) Conductors larger than 13 mm² require special dies




## Approvals

E9809

## Ordering Information

| Product Ref. | USA Stud size** | Dimensions A [mm] | B [mm] | C [mm] | D [mm] | E* [mm] | Combined wire size [mm²] | Rectangular wire range Thickness min - max [mm] | Width min - max [mm] | Tooling |
|---|---|---|---|---|---|---|---|---|---|---|
| 220017 | 3/8 | 22.4 | 38.1 | 70.1 | 26.9 | (a) | 25.3 - 58.2 | 2.5 - 4.4 | 7.6 - 15.9 | |
| 220018 | 1/2 | 22.4 | 38.1 | 70.1 | 26.9 | (a) | 25.3 - 58.2 | 2.5 - 4.4 | 7.6 - 15.9 | |
| 220021 (b) | 3/8 | 22.4 | 38.1 | 70.1 | 26.9 | (a) | 55.7 - 88.7 | 4.4 - 6.4 | 7.6 - 15.9 | 13100A |
| 220022 (b) | 1/2 | 22.4 | 38.1 | 70.1 | 26.9 | (a) | 55.7 - 88.7 | 4.4 - 6.4 | 7.6 - 15.9 | TBM15i |
| 220025 | 3/8 | 22.4 | 38.1 | 70.1 | 26.9 | (a) | 55.7 - 116.8 | 4.4 - 8.3 | 7.6 - 15.9 | |
| 220026 | 1/2 | 22.4 | 38.1 | 70.1 | 26.9 | (a) | 55.7 - 116.8 | 4.4 - 8.3 | 7.6 - 15.9 | |

* Reference dimension (crimped height): see installing die illustration for gauging

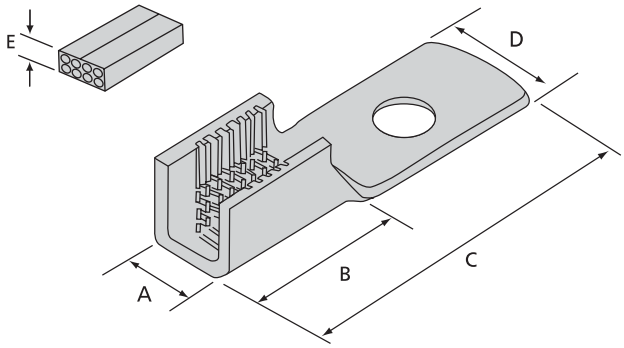
** USA stud size: see page 358 for metric conversion

Use selection chart to determine appropriate die set (see pages 380 and 381)

See pages 374 to 381 for tooling specifications

(a) Crimping dies may not bottom. Connector height will depend on number and size of wires in barrel. Pump must deliver 9.800 psi min.

(b) Not UL approved




## Approvals

E9809

## Ordering Information

| Product Ref. | USA Stud size** | Dimensions A [mm] | B [mm] | C [mm] | D [mm] | E* [mm] | Combined wire size [mm²] | Round wire range min - max [mm] | Rectangular wire range Thickness min - max [mm] | Width min - max [mm] | Tooling Hand tool | Power tool |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 22R061 | 6 | 4.1 | 8.1 | 19.8 | 7.6 | 2.5 | 0.2 - 2.1 | 0.51 - 1.45 (a) | 0.51 - 1.27 | 0.51 - 2.54 | | |
| 22R081 | 8 | 4.1 | 8.1 | 19.8 | 7.6 | 2.5 | 0.2 - 2.1 | 0.51 - 1.45 (a) | 0.51 - 1.27 | 0.51 - 2.54 | ERG1801 | 11903A |
| 22R101 | 10 | 4.1 | 8.1 | 19.8 | 7.6 | 2.5 | 0.2 - 2.1 | 0.51 - 1.45 (a) | 0.51 - 1.27 | 0.51 - 2.54 | | 11904A |
| 22R086 | 8 | 6.4 | 11.5 | 23.1 | 7.6 | 3.3 | 1.3 - 6.2 | 1.29 - 2.05 | 1.27 - 2.03 | 1.27 - 4.06 | ERG1806 | 13500 |
| 22R106 | 10 | 6.4 | 11.5 | 23.1 | 7.6 | 3.3 | 1.3 - 6.2 | 1.29 - 2.05 | 1.27 - 2.03 | 1.27 - 4.06 | | |

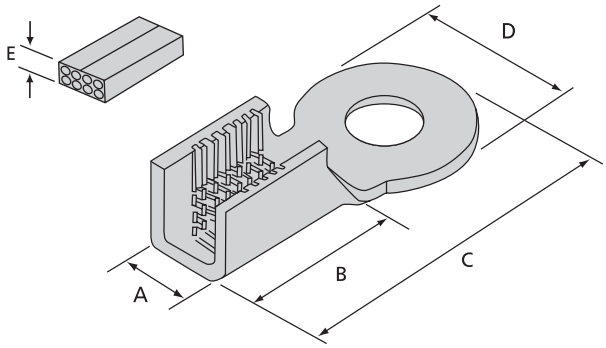
* Reference dimension (crimped height): see installing die illustration for gauging

** USA stud size: see page 358 for metric conversion

Use selection chart to determine appropriate die set (see pages 380 and 381)

See pages 374 to 381 for tooling specifications

(a) 0.51 - 0.64 mm diameter and equivalent rectangular wire size, copper only




## Approvals

E9809

## Ordering Information

| Product Ref. | USA Stud size** | Dimensions A [mm] | B [mm] | C [mm] | D [mm] | E* [mm] | Combined wire size [mm²] | Round wire range min - max [mm] | Rectangular wire range Thickness min - max [mm] | Width min - max [mm] | Tooling Hand tool | Power tool*** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 22R146 | 1/4 | 6.4 | 11.5 | 24.2 | 10.7 | 3.3 | 1.3 - 6.2 | 1.29 - 2.05 | 1.27 - 2.03 | 1.27 - 4.06 | ERG1806 | 11903A 11904A 13500 |

* Reference dimension (crimped height): see installing die illustration for gauging

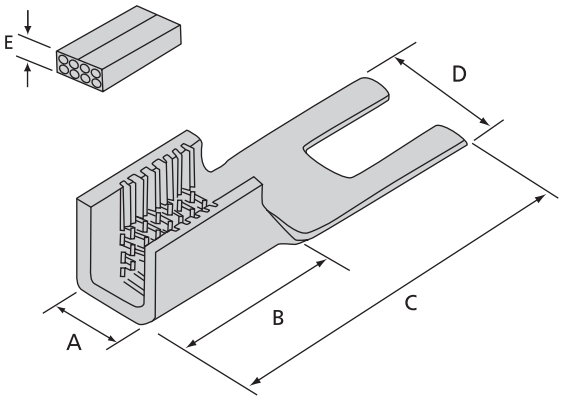
** USA stud size: see page 358 for metric conversion

*** Use selection chart to determine appropriate die set (see pages 380 and 381)

See pages 374 to 381 for tooling specifications

# Dragon Tooth®

## Fork terminals




## Approvals

E9809

## Ordering Information

| Product Ref. | USA Stud size** | Dimensions A [mm] | B [mm] | C [mm] | D [mm] | E* [mm] | Combined wire size [mm²] | Round wire range min - max [mm] | Rectangular wire range Thickness min - max [mm] | Width min - max [mm] | Tooling Hand tool | Power tool*** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 22F061 | 6 | 4.1 | 8.1 | 19.8 | 7.6 | 2.5 | 0.2 - 2.1 | 0.51 - 1.45 (a) | 0.51 - 1.27 | 0.51 - 2.54 | | |
| 22F081 | 8 | 4.1 | 8.1 | 19.8 | 7.6 | 2.5 | 0.2 - 2.1 | 0.51 - 1.45 (a) | 0.51 - 1.27 | 0.51 - 2.54 | ERG1801 | 11903A |
| 22F101 | 10 | 4.1 | 8.1 | 19.8 | 7.6 | 2.5 | 0.2 - 2.1 | 0.51 - 1.45 (a) | 0.51 - 1.27 | 0.51 - 2.54 | | 11904A |
| 22F066 | 6 | 6.4 | 11.4 | 23.1 | 7.6 | 3.3 | 1.3 - 6.2 | 1.29 - 2.05 | 1.27 - 2.03 | 1.27 - 4.06 | | 13500 |
| 22F086 | 8 | 6.4 | 11.4 | 23.1 | 7.6 | 3.3 | 1.3 - 6.2 | 1.29 - 2.05 | 1.27 - 2.03 | 1.27 - 4.06 | ERG1806 | |
| 22F106 | 10 | 6.4 | 11.4 | 23.1 | 7.6 | 3.3 | 1.3 - 6.2 | 1.29 - 2.05 | 1.27 - 2.03 | 1.27 - 4.06 | | |

* Reference dimension (crimped height): see installing die illustration for gauging

** USA stud size: see page 358 for metric conversion

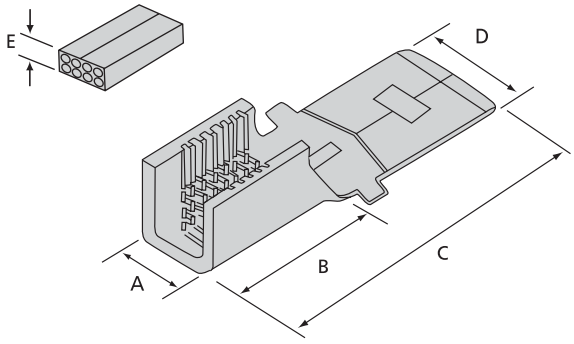
*** Use selection chart to determine appropriate die set (see pages 380 and 381)

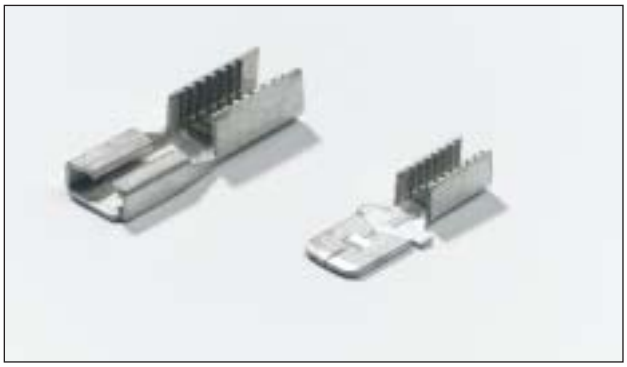
See pages 374 to 381 for tooling specifications

(a) 0.51 - 0.64 mm diameter and equivalent rectangular wire size, copper only

# Dragon Tooth®

## Disconnect terminals



## Approvals

E9809

## Ordering Information

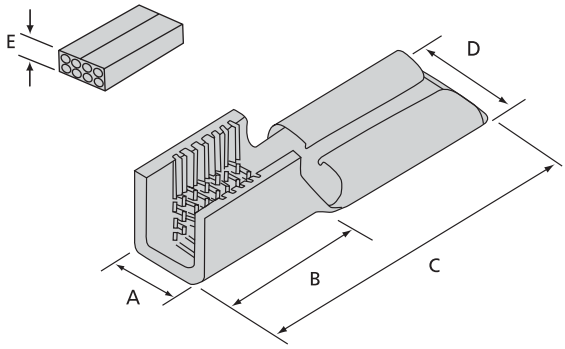
| Product Ref. | Male tab size | Dimensions | | | | | Combined wire size | Round wire range min - max | Rectangular wire range | | Tooling | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E* | | | Thickness min - max | Width min - max | Hand tool | Power tool** |
| | [mm x mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm²] | [mm] | [mm] | [mm] | | |
| 22LM01*** | 6.35 x 0.8 | 4.1 | 8.1 | 19.3 | 6.4 | 2.5 | 0.2 - 2.1 | 0.50 - 1.45*** | 0.51 - 1.27 | 0.5 - 2.5 | ERG1801 | 11903A, 11904A 13500 |
| 22LM06 | 6.35 x 0.8 | 6.4 | 11.5 | 23.0 | 6.4 | 3.3 | 1.3 - 6.2 | 1.29 - 2.05 | 1.27 - 2.03 | 1.3 - 4.1 | ERG1806 | |

* Reference dimension (crimped height): see installing die illustration for gauging

** Use selection chart to determine appropriate die set (see pages 380 and 381)

*** 0.51 - 0.64 mm diameter and equivalent wire size, copper only

See pages 374 to 381 for tooling specifications




## Approvals

E9809

## Ordering Information

| Product Ref. | Male tab size | Dimensions | | | | | Combined wire size | Round wire range min - max | Rectangular wire range | | Tooling | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E* | | | Thickness min - max | Width min - max | Hand tool | Power tool** |
| | [mm x mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm²] | [mm] | [mm] | [mm] | | |
| 22LF01*** | 6.3 x 0.8 | 4.1 | 8.1 | 20.1 | 6.4 | 2.5 | 0.2 - 2.1 | 0.50 - 1.45*** | 0.51 - 1.27 | 0.5 - 2.5 | ERG1801 | 11903A 11904A 13500 |
| 22LF06 | 6.3 x 0.8 | 6.4 | 11.5 | 23.0 | 6.4 | 3.3 | 1.3 - 6.2 | 1.29 - 2.05 | 1.27 - 2.03 | 1.3 - 4.1 | ERG1806 | |

* Reference dimension (crimped height): see installing die illustration for gauging

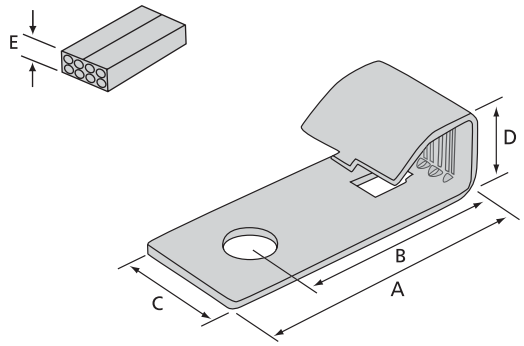
** Use selection chart to determine appropriate die set (see pages 380 and 381)

*** 0.51 - 0.64 mm diameter and equivalent wire size, copper only

See pages 374 to 381 for tooling specifications

# Dragon Tooth®

## Taps




## Approvals

E9809

## Ordering Information

| Product Ref. | USA Stud size** | Dimensions A [mm] | B [mm] | C [mm] | D [mm] | E* [mm] | Combined wire size [mm²] | Round wire range min - max [mm] | Rectangular wire range Thickness min - max [mm] | Width min - max [mm] | Tooling |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 204T14 | 1/4 | 41.2 | 31.0 | 17.8 | 12.7 | 5.6 | 5.2 - 26.6 | 2.58 - 4.1 | 2.3 - 2.9 | 2.3 - 8.1 | 13100A |
| 204T38 | 3/8 | 41.2 | 31.0 | 17.8 | 12.7 | 5.6 | 5.2 - 26.6 | 2.58 - 4.1 | 2.3 - 2.9 | 2.3 - 8.1 | TBM15i |

* Reference dimension (crimped height): see installing die illustration for gauging

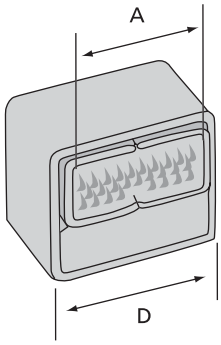
** USA stud size: see page 358 for metric conversion

Use selection chart to determine appropriate die set (see pages 380 and 381)

See pages 374 to 381 for tooling specifications

# Dragon Tooth®

## Modular connectors




## Approvals

E9809

## Ordering Information

| Product Ref. | Dimensions | | | Combined wire size | Round wire range min - max | Rectangular wire range | | Tooling |
|---|---|---|---|---|---|---|---|---|
| | A | D | E* | | | wire thickness min - max | wire width min - max | |
| | [mm] | [mm] | [mm] | [mm²] | [mm] | [mm] | [mm] | |
| 210214MT | 16.0 | 19.1 | (a) | 10.1 - 53.2 | 1.8 - 4.62 | 2.0 - 3.8 (upper half)<br>6.4 max. (lower half) | 2.0 - 12.4 (upper half)<br>19.1 max. (lower half) | 13100A<br>13400, TBM15i |
| 204210MT | 23.8 | 26.2 | (a) | 45.6 - 108.9 | 2.6 - 5.84 | 2.5 - 6.8 (upper half)<br>6.4 max. (lower half) | 2.5 - 23.4 (upper half)<br>26.2 max. (lower half) | 13400 |

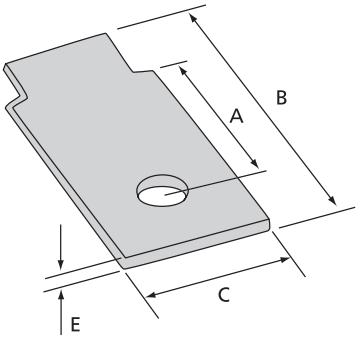
* Reference dimension (crimped height): see installing die illustration for gauging

(a) Crimping dies may not bottom. Connector height will depend on number and size of wires in barrel. Pump must deliver 9.800 psi min.

Note: combined wire size is for the whole connector (including upper half and lower half)

Use selection chart to determine appropriate die set (see pages 380 and 381)

See pages 374 to 381 for tooling specifications




## Approvals

E9809

## Ordering Information

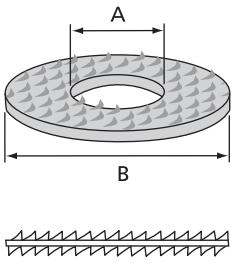
| Product Ref. | USA Stud size** | Dimensions A [mm] | B [mm] | C [mm] | E* [mm] | Description |
|---|---|---|---|---|---|---|
| 210MT14 | 1/4 | 25.4 | 36.5 | 20.8 | 2.3 | Screw-on clip for connectors 210214MT |
| 210MT38 | 3/8 | 25.4 | 36.5 | 20.8 | 2.3 | Screw-on clip for connectors 210214MT |
| 204MT14 | 1/4 | 25.4 | 36.5 | 23.1 | 3.0 | Screw-on clip for connectors 204210MT |
| 204MT38 | 3/8 | 25.4 | 36.5 | 23.1 | 3.0 | Screw-on clip for connectors 204210MT |

* Reference dimensions: see installing die illustration for gauging

** USA stud size: see page 358 for metric conversion

# Dragon Tooth®

## Washers

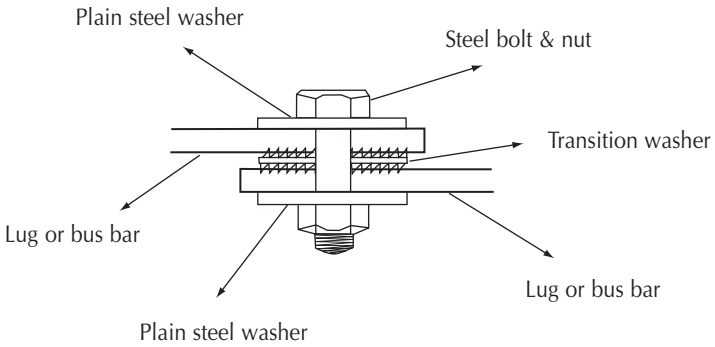



Teeth on the transition washers penetrate aluminium and copper oxides, enabling copper to aluminium connections to be made in a bolted joint without the use of inhibiting compounds. Transition washers also accommodate the difference in thermal expansion between copper and aluminium, and enhance the efficiency of bolted grounding connections.

## Ordering Information

| Product Ref. | USA stud size* | Metric equivalent stud size | A [mm] | B [mm] | Recommended installing torque [Nm] |
|---|---|---|---|---|---|
| FPW14 | 1/4 | M6 | 6.9 | 17.3 | 5.5 - 9 |
| FPW516 | 5/16 | M8 | 8.6 | 25.4 | 14 - 18 |
| FPW38 | 3/8 | M10 | 10.9 | 25.4 | 18 - 27 |
| FPW12 | 1/2 | M14 | 14.2 | 31.8 | 44 - 61 |
| FPW58 | 5/8 | M16 | 17.3 | 35.6 | 61 - 82.5 |

* USA stud size: see page 358 for metric conversion



# 5.3 Dragon Tooth®

## Hand tools

These manually operated tools are suitable for prototyping and limited production usage. They are equipped with a Shure-Stake™ mechanism which requires full closure of the dies before release. Appropriate to crimp butt splices, parallel splices, taps and terminations. Dies are self-contained.

### Ergonomic hand tools

- Fixed die tool
- Incorporates the ergonomically designed Comfort Crimp™ tool handles which distribute the force more evenly across the hand
- Shure-Stake™ mechanism ensures a complete crimp cycle before the tool releases
- Rubberised thermoplastic handles combine maximum friction with a soft, comfortable feel that reduces muscle tension
- Two-piece movable die nest provides easy connector removal

## Ordering Information

| Product Ref. | Tool gauging [mm] | Connector |
|---|---|---|
| ERG1801 | 1.75 max. | 22,F,L,R-1 Series |
| ERG1802 | 1.93 max. | 22L002 |
| ERG1804 | 0.86 max. | 22L004 |
| ERG1806 | 2.41 max. | 22,F,L,R-6 Series |
| ERG811 | – | 214420 |

### Standard hand tool

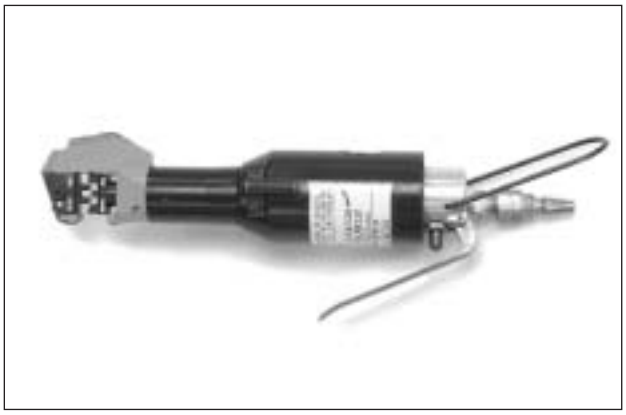
**Product Ref. WT811**

- Hand operated crimping tool with single die for installing Thomas & Betts insulation piercing connectors on magnet wire
- Incorporates a Shure-Stake™ mechanism which will not allow the dies to open until preset crimping is reached.
- Single die nest for 214420 connector only
- Weight: 0.45 kg
- Material: high strength steel
- Maintenance: Occasional light oiling

# Dragon Tooth®

## Air-operated tools

### Air hydraulic tool



This pneumatic operated crimping tool will install Dragon Tooth® terminals. It is available in hand or foot actuated models, with open "C" yoke design.
The 3 interchangeable dies can crimp the 22xxx1, 22xxx2 and 22xxx6 series terminals and need to ordered separately
(see next page for the Product Ref. of the dies)

## Ordering Information Air hydraulic tool

| Product Ref. | Description |
|---|---|
| 11903A | Open "C" yoke, hand actuated |
| 11904A | Open "C" yoke, foot actuated |
| 11913 | 2.43 m long airhose with 1/4 NPT male & female fittings |
| 11930 | Foot valve for 11904A |

Product Ref. 11904A also requires two Product Ref. 11913 air hoses and one Product Ref. 11930 foot valve.
Product Ref. 11903A also requires one Product Ref. 11913 air hose.

## Technical Information 11903A and 11904A

| | |
|---|---|
| Material | Steel with backed enamel paint finish |
| Overall length | 276 mm |
| Diameter | 57 mm |
| Operating Pressure | 90 - 100 PSI (6.2-6.9 bar) |
| Weight | 1.4 kg |

### Air operated – bench mounted tool

**Product Ref.: 13500**

Heavy duty air operated tool installs a wide range of Dragon Tooth® connectors.

- High speed installation
- 3 interchangeable dies to be ordered separately (see next page for the Product Ref. of the dies)
- Bench mounted for stability and operator control
- Compact size, all metallic construction
- Includes hoses, foot pedal and air treatment system
- Equipped with Shure-Stake™ mechanism ensuring full crimp cycle before release

## Technical Information

| | |
|---|---|
| Height | 305 mm |
| Base | 203 mm x 203 mm |
| Weight | 7.7 kg |
| Operating Pressure | (85 - 90 PSI) 5.9-6.2 bar |

# 5.3 Dragon Tooth®

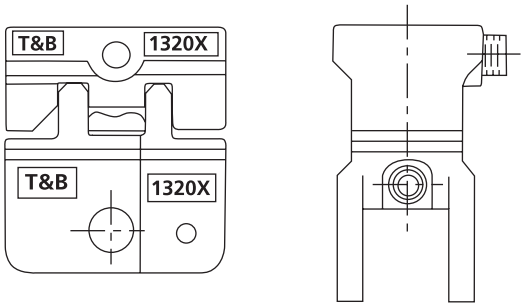
## Interchangeable dies for air operated tools

### Ordering Information - Dies

| Product Ref. | Colour code | Connector | Die gauge max. [mm] | Die gauge min. [mm] |
|---|---|---|---|---|
| 13201 | pink | 22XXX1 SERIES | 1.68 | 1.57 |
| 13202 | brown | 22XXX2 SERIES | 1.83 | 1.73 |
| 13206 | yellow | 22XXX6 SERIES | 2.29 | 2.18 |

Compatible with 11903A, 11904A and 13500 air operated tools.

**Installing Dies for 11903A, 11904A & 13500 Tools**




### Auto-feed tools for connectors on strip

Pneumatic bench mounted foot operated tool for crimping copper or aluminium magnet wire and copper lead wire, not solder dipped or bonded.

- Operates on min. 85 psi, 6.0 bar air supply
- Foot pedal contains T&B Shure-Stake™ control mechanism which ensures a full compression each time
- Insulation piercing connectors are fed on a continuous reel mounted strip
- Dies are self-contained. Includes foot valve, hoses and air treatment system

### Ordering Information

| Product Ref. | Connector product ref. | Connector qty per reel | Tool weight [kg] | Tool width [mm] | Tool depth [mm] | Tool height [mm] |
|---|---|---|---|---|---|---|
| 13676A | 220004 | 9000 | 8.6 | 127 | 356 | 279 |
| 13678 | 220001 | 3000 | 12.7 | 152 | 457 | 356 |
| 13679 | 220002-TB | 3000 | 12.7 | 152 | 457 | 356 |
| 13696 | 220006 | 2500 | 14.5 | 152 | 457 | 406 |

See page 359 for more information about the connectors on strip.

## 14 Ton hydraulic head

**Product Ref.: 13100A**

- Output: 14 tons (nominal)
- Hydraulic operating pressure: 10,000 psi max., 690 bar
- Length (with coupling): 292 mm
- Width: 108 mm
- Weight (without dies): 4.5 kg
- Dies delivered separately

See selection chart on the next page for complete listing of dies and connectors used with 13100A.

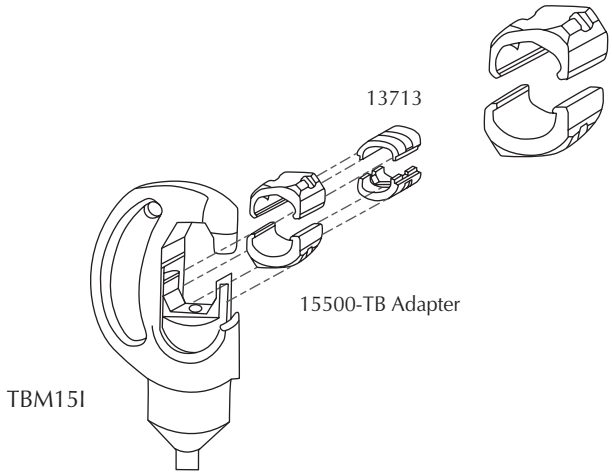
## 15 Ton hydraulic head

**Product Ref.: TBM15I**

- New longer, slimmer profile allows easier access into tight spaces
- Wider jaw opening eases crimping of larger connectors
- Available with an insulated head
- Supplied in a carrying case in steel
- Output force: 15 tons (nominal)
- Operating pressure: 10,000 psi (nominal), 690 bar

- Tool weight: 7 kg (without dies)
- Dies delivered separately

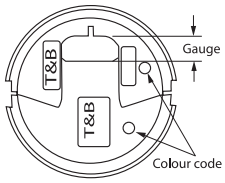
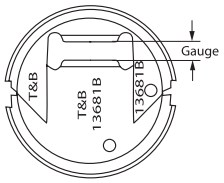
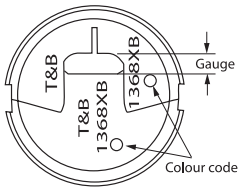
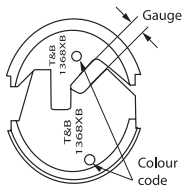
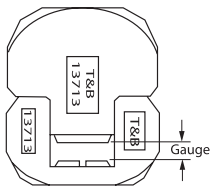
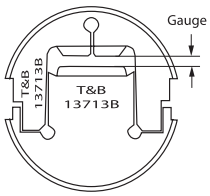
See selection chart on the next page for complete listing of dies and connectors used with TBM15i.



## Installing dies for 13100A and TBM15i tool heads

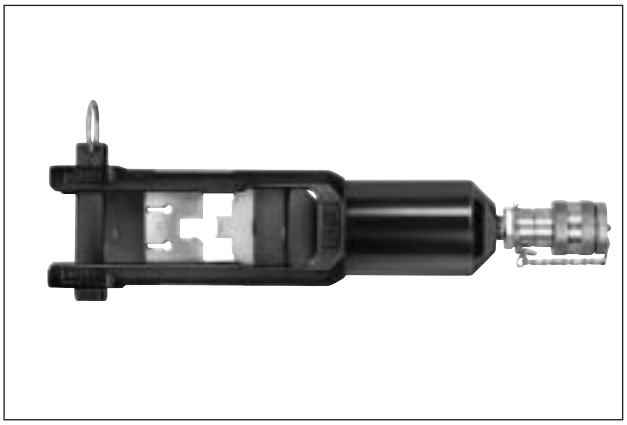
- Material: alloy steel
- Can be used on 13100 and TBM15i tool heads (for the TBM15i, the 15500TB adapter is required)
- The die Nr 13713 is for the TBM15I tool head only (no adapter required)
- The die Nr 13713B is for the 13100A tool head only

## Ordering Information

| | Product Ref. | Colour code | For connector | Gauge max. [mm] | Gauge min. [mm] |
|---|---|---|---|---|---|
|  | 13670B | red | 210xxx series | 4.42 | 4.11 |
| | 13671B | blue | 204xxx series | 6.25 | 5.94 |
| | 13673B | green | 204xxxH series | 11.94 | 11.79 |
|  | 13681B | yellow | 210214MT | 4.47 | 4.17 |
|  | 13683B | white | 22L008 | 2.84 | 2.46 |
| | 13684B | yellow | 22L009 | 4.93 | 4.55 |
| | 13686B | orange | 22L009H | 9.50 | 9.12 |
|  | 13689B | purple | 204Txx series | 5.18 | 4.80 |
|  | 13713* | | 220015 to 220026 | 2.79 | 2.03 |
|  | 13713B** | | 220015 to 220026 | 2.92 | 2.16 |

* 13713 is for the TBM15i tool head only (no adapter required)

** 13713B is for the 13100A tool head only



## 12 Ton hydraulic head

**Product Ref.: 13400**

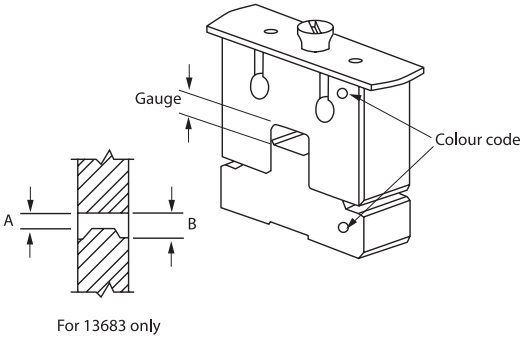
- Output: 12 tons (nominal)
- Hydraulic operating pressure: 10.000 psi max., 690 bar
- Length (with coupling): 368 mm
- Width: 84 mm
- Weight (without dies): 6.8 kg
- Dies delivered separately

## Installing dies for 13400

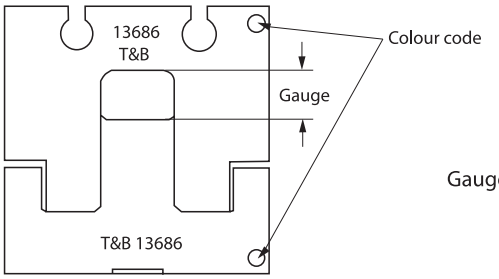
- Material: alloy steel

## Ordering Information

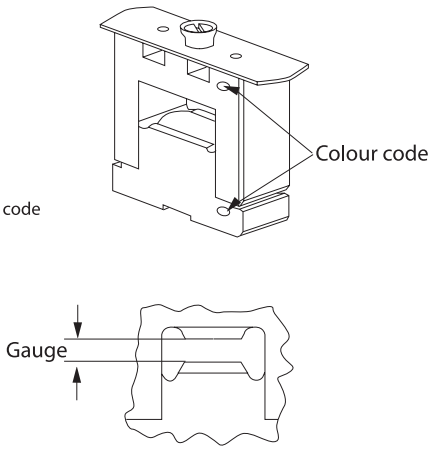
| Product Ref. | Colour code | For connector | Gauge max. [mm] | Gauge min. [mm] |
|---|---|---|---|---|
| 13670A | red | 210xxx series | 4.42 | 4.11 |
| 13671A | blue | 204xxx series | 6.25 | 5.94 |
| 13673 | green | 204xxxH series | 11.94 | 11.79 |
| 13681 | yellow | 210214MT | 4.47 | 4.17 |
| 13682 | brown | 204210MT | 7.65 | 7.34 |
| 13683 | white | 22L008 | A: 2.74<br>B: 3.10 | A: 2.59<br>B: 2.90 |
| 13684 | yellow | 22L009 | 4.83 | 4.65 |
| 13685 | black | 314xxx series | 3.45 | 3.15 |
| 13686 | orange | 22L009H | 9.37 | 9.22 |




13670A, 13671A, 13673, 13683, 13684, 13685




13686




13681, 13682

## Selection chart - connectors and tooling

| | Hand tools (fixed die) | Pneumatic tools 11903A, 11904-A 13500 | Auto-feed tool for magnet wire on strip | 14 ton hydraulic head 13100A | 12 ton hydraulic head 13400 | 15 ton hydraulic head TBM15i |
|---|---|---|---|---|---|---|
| TERMINALS | TOOL | DIE | TOOL | DIE | DIE | DIE + ADAPTOR |
| 204210MT | – | – | – | – | 13682 | – |
| 204210S | – | – | – | 13671B | 13671A | 13671B with 15500TB |
| 204210SH | – | – | – | 13673B | 13673 | 13673B with 15500TB |
| 204210-1 | – | – | – | 13671B | 13671A | 13671B with 15500TB |
| 204210-1H | – | – | – | 13673B | 13673 | 13673B with 15500TB |
| 204210-2 | – | – | – | 13671B | 13671A | 13671B with 15500TB |
| 204210-3 | – | – | – | 13671B | 13671A | 13671B with 15500TB |
| 204210-3H | – | – | – | 13673B | 13673 | 13673B with 15500TB |
| 204201-5 | – | – | – | 13671B | 13671A | 13671B with 15500TB |
| 204211 | – | – | – | 13671B | 13671A | 13671B with 15500TB |
| 204212 | – | – | – | 13671B | 13671A | 13671B with 15500TB |
| 204217 | – | – | – | 13671B | 13671A | 13671B with 15500TB |
| 204MT14 | – | – | – | – | – | – |
| 204MT38 | – | – | – | – | – | – |
| 204T14 | – | – | – | 13689B | – | 13689B with 15500TB |
| 204T38 | – | – | – | 13689B | – | 13689B with 15500TB |
| 210214MT | – | – | – | 13681B | 13681 | 13681B with 15500TB |
| 210214S | – | – | – | 13670B | 13670A | 13670B with 15500TB |
| 210214-2 | – | – | – | 13670B | 13670A | 13670B with 15500TB |
| 210214-3 | – | – | – | 13670B | 13670A | 13670B with 15500TB |
| 210216 | – | – | – | 13670B | 13670A | 13670B with 15500TB |
| 210217 | – | – | – | 13670B | 13670A | 13670B with 15500TB |
| 210219 | – | – | – | 13670B | 13670A | 13670B with 15500TB |
| 210MT14 | – | – | – | – | – | – |
| 210MT38 | – | – | – | – | – | – |
| 214420 | WT811 / ERG811 | 11956 | – | – | – | – |
| 220001 | – | – | 13678 | – | – | – |
| 220002-TB | – | – | 13679 | – | – | – |
| 220004 | – | – | 13676A | – | – | – |
| 220006 | – | – | 13696 | – | – | – |
| 220015 | – | – | – | 13713B | – | 13713 |
| 220016 | – | – | – | 13713B | – | 13713 |
| 220017 | – | – | – | 13713B | – | 13713 |
| 220018 | – | – | – | 13713B | – | 13713 |
| 220019 | – | – | – | 13713B | – | 13713 |
| 220020 | – | – | – | 13713B | – | 13713 |
| 220021 | – | – | – | 13713B | – | 13713 |
| 220022 | – | – | – | 13713B | – | 13713 |
| 220023 | – | – | – | 13713B | – | 13713 |
| 220024 | – | – | – | 13713B | – | 13713 |
| 220025 | – | – | – | 13713B | – | 13713 |
| 220026 | – | – | – | 13713B | – | 13713 |

(continued on page 381)

## Selection chart - connectors and tooling

| | Hand tools (fixed die) | Pneumatic tools 11903A, 11904-A 13500 | Auto-feed tool for magnet wire on strip | 14 ton hydraulic head 13100A | 12 ton hydraulic head 13400 | 15 ton hydraulic head TBM15i |
|---|---|---|---|---|---|---|
| **TERMINALS** | **TOOL** | **DIE** | **TOOL** | **DIE** | **DIE** | **DIE + ADAPTOR** |
| 22F061 | ERG1801 | 13201 | – | – | – | – |
| 22F066 | ERG1806 | 13206 | – | – | – | – |
| 22F081 | ERG1801 | 13201 | – | – | – | – |
| 22F086 | ERG1806 | 13206 | – | – | – | – |
| 22F101 | ERG1801 | 13201 | – | – | – | – |
| 22F106 | ERG1806 | 13206 | – | – | – | – |
| 22L001 | ERG1801 | 13201 | – | – | – | – |
| 22L002 | ERG1802 | 13202 | – | – | – | – |
| 22L004 | ERG1804 | – | – | – | – | – |
| 22L006 | ERG1806 | 13206 | – | – | – | – |
| 22L008 | – | – | – | 13683B | 13683 | 13683B with 15500TB |
| 22L009 | – | – | – | 13684B | 13684 | 13684B with 15500TB |
| 22L009H | – | – | – | 13686B | 13686 | 13686B with 15500TB |
| 22LF01 | ERG1801 | 13201 | – | – | – | – |
| 22LF06 | ERG1806 | 13206 | – | – | – | – |
| 22LM01 | ERG1801 | 13201 | – | – | – | – |
| 22LM06 | ERG1806 | 13206 | – | – | – | – |
| 22R061 | ERG1801 | 13201 | – | – | – | – |
| 22R106 | ERG1806 | 13206 | – | – | – | – |
| 22R146 | ERG1806 | 13206 | – | – | – | – |
| 314118S | – | – | – | 13685B | 13685 | 13685B with 15500TB |
| 314123 | – | – | – | 13685B | 13685 | 13685B with 15500TB |
| 314125 | – | – | – | 13685B | 13685 | 13685B with 15500TB |

**Note:** Dies that fit 13100A also work in TBM15i with use of adapter 15500TB.

# Shield-Kon®

# Solderless connectors for grounding shielded and coaxial cables

## 5. Termination systems

# 5.4 Shield-Kon®

## Introduction

Wherever shielded cables and wires are fitted, there is the problem of finding a permanent, repeatable, safe and quick connection of the braided shield.
Conventional connection methods use soldering, which is more time-consuming and more expensive, and can often result in damage to the dielectric or to the internal shield conductor caused by heat. Moreover, the use of lead-based soldering methods can be in conflict with the latest European regulations.

The Shield-Kon® solution from Thomas & Betts involves a crimp technique for shield termination on shielded cables. The reliability of Shield-Kon® terminals has led to a specification for the aeronautical and space technology industry and for military applications (MIL-F-21608).

Thomas & Betts offer two solutions:
- The one-piece Shield-Kon® connector, which is wrapped around the shield during the crimping process.

- The two-piece Shield-Kon® connector, which consists of two sleeves, between which the shielded braid and the drain wire are compressed.

The essential advantages are clearly visible:
- Saves time and reduces assembly costs
- Safe monitoring
- Simple operation
- Low profile and compact connectors
- Tried and tested technology
- Constant connections of consistent quality

# Shield-Kon®

## One-piece connector: Overview

This solderless, wrap-around connector terminates shielded cable in seconds ... with uniform precision. It is particularly well suited for production work in aircraft, aerospace and electronic industries where size and weight are of importance.

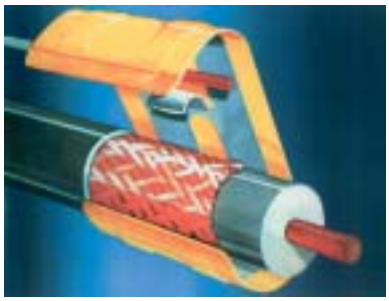
Once crimped, it provides a compact, lightweight, low resistance, high strength connection, which meets and exceeds the performance requirements of MIL-F-21608.

The connector works equally well on braided, wrapped, or foil shields and has the added advantage of being able to be used as a mid-span termination.

Only four sizes, which can be easily identified by the colour of their insulation, are needed to cover a range of shielding diameters from 1.27 mm to 7.62 mm.

## Features & Benefits

- Compact, low profile connector
- One piece "Wrap-around" design
- Tough Polyester insulation (Mylar® -type)
- Inventory savings: only 4 sizes
- Transparent insulation, easily inspected
- MIL specified, industry approved technology
- NO HEAT OR POWER REQUIRED to install
- No damage to inner conductor
- Less installation time required
- Uniform, precise connection every time
- Low installed cost
- Mid-span termination possible, eliminating the need to demount a cable already installed

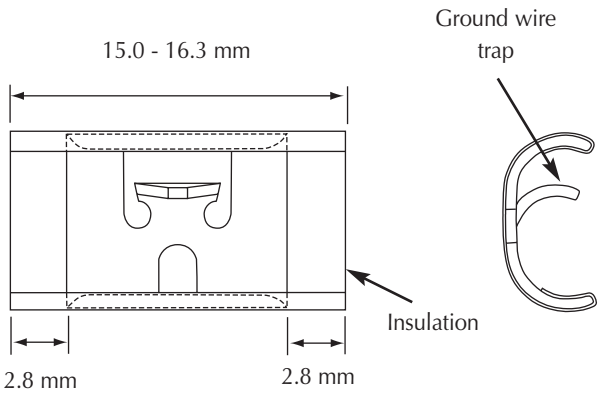


The one-piece Shield-Kon® connectors meet the MIL-F-21608 standards for the following environmental specifications:

## Technical Information: One-piece Shield-Kon® connectors

| | |
|---|---|
| Material | Copper, conform to CDA No. 110 |
| Plating | Tin, electro-plated (thickness 3 to 8 µm), in accordance with MIL-T-10727A |
| Insulation | Polyester film (Mylar® type), colour coded for size identification |
| Temperature | -65°C to +125°C |

Mylar® is a registered trade mark of Du Pont de Nemours




## Technical Information

| | |
|---|---|
| Voltage drop | 9 mV max. at 1 Ampere after environmental exposure |
| Plating | Electro-deposit tin in accordance with MIL-T-10727A |
| Insulation dielectric strength | 500 VRMS at 60 Hz for one minute |
| Corrosion resistance | 48 hours in 5% salt fog |
| Pullout strength | 67 N min. with 0.25 $mm^2$ drain wire and 85N min. with 0.5 $mm^2$ drain wire |
| Vibration | 0.76 mm double amplitude between 10 and 55Hz for 6 hours on each of two axis |

## Ordering Information: one-piece Shield-Kon® connectors

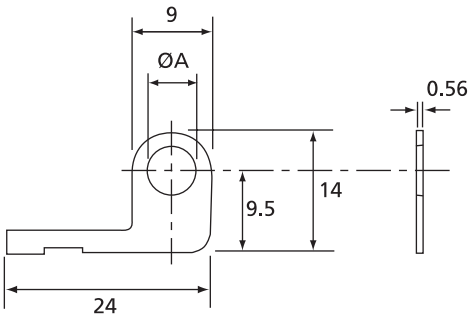
| | Product Ref. | Colour | Shield diameter range [mm] | Acceptable drain wire size** | Quantity [pieces] | Installation tool* |
|---|---|---|---|---|---|---|
|  | RSK101 | red | 1.27 - 2.28 | 1 or 2 pieces 0.25mm² | 1000 | WT740 ERG740 |
| | RSK5101 | | | | 100 | |
|  | RSK201 | blue | 2.29 - 3.65 | 1 or 2 pieces 0.25mm², or 1 piece 0.5mm² | 1000 | |
| | RSK5201 | | | | 100 | |
|  | RSK301 | yellow | 3.66 - 5.12 | 1 or 2 pieces 0.25mm², or 1 piece 0.5mm² | 1000 | |
| | RSK5301 | | | | 100 | |
|  | RSK401 | green | 5.13 - 7.62 | 1 or 2 pieces 0.5mm², or 1 piece 0.75mm² | 500 | |
| | RSK5401 | | | | 100 | |

(*) See pages 390 to 394 for tooling specifications and for die selection
(**) Alternatively, a special accessory (RSK-flag) can be used in place of the drain wire, with the yellow and the green connectors (see below)

Note: the connectors can also be supplied on reel for high volume applications with semi-automatic machine (see page 394)

## Accessories: the RSK-FLAG connector

- The RSK-FLAG is inserted into the one-piece Shield-Kon® connector and replaces the drain-wire
- Easy & direct connection of the RSK-FLAG to a piece of earthed equipment thanks to the installation hole
- Available in 3 sizes of hole
- To be used with the RSK-301 (yellow) or RSK-401 (green) connectors




## Technical Information: the RSK FLAG

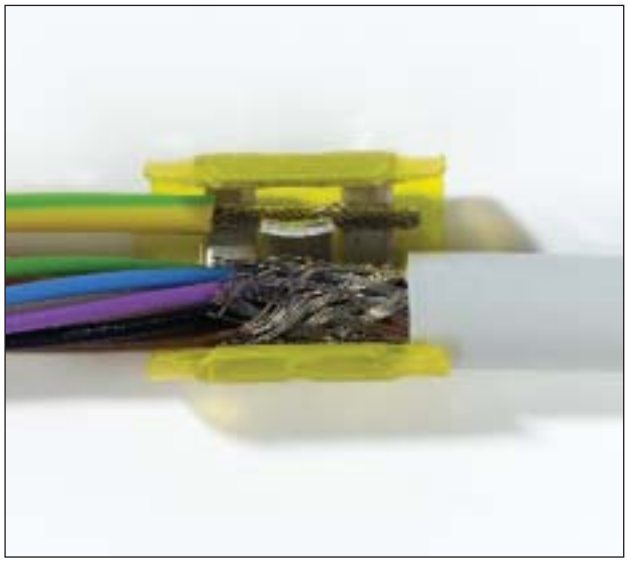
| | |
|---|---|
| Material | Electrolytic copper |
| Plating | Zinc alloy |

## Ordering Information for the RSK FLAG

| Product Ref. | Termination screw size ØA | Weight [g/100] | Quantity [pieces] |
|---|---|---|---|
| RSK-FLAG-B3 | M3 | 75 | 1000 |
| RSK-FLAG-B4 | M4 | 75 | 1000 |
| RSK-FLAG-B5 | M5 | 75 | 1000 |

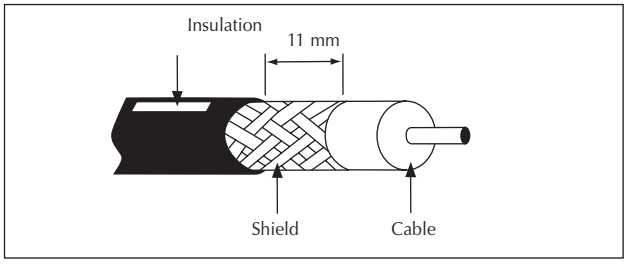
# Shield-Kon®

## One-piece connector: Installation methods and procedure



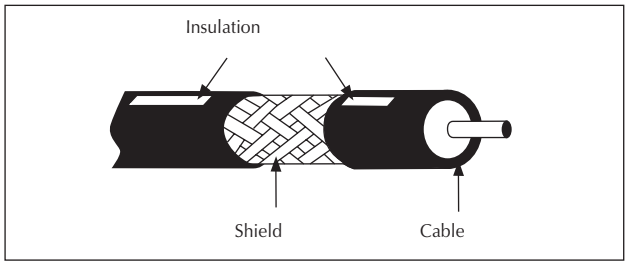
## Installation methods

### Standard method



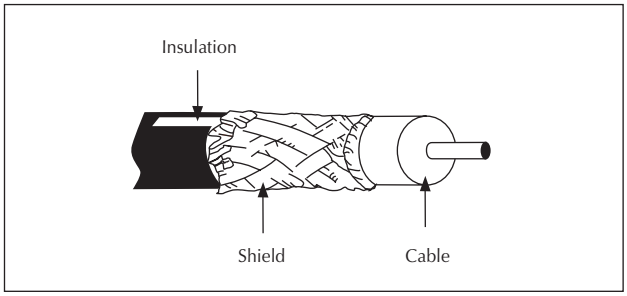

Use the standard method when the shielded cable or the inner conductors are embedded in a dielectric.

### Mid-Span method



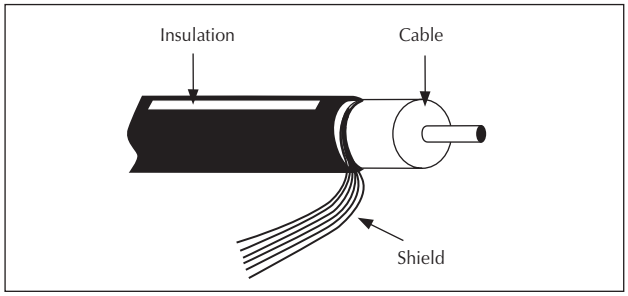

Allows installation anywhere along the cable.

### Fold-back method 1




If there is no common dielectric for several interior cables but the gaps are filled by textile threads or something similar, care should be taken to ensure that the insulating thickness of the individual cables is not less than 0.38 mm for PVC, and not less than 0.25 mm for Teflon. If this insulation thickness falls below this value, fold-back method 1 should be used.

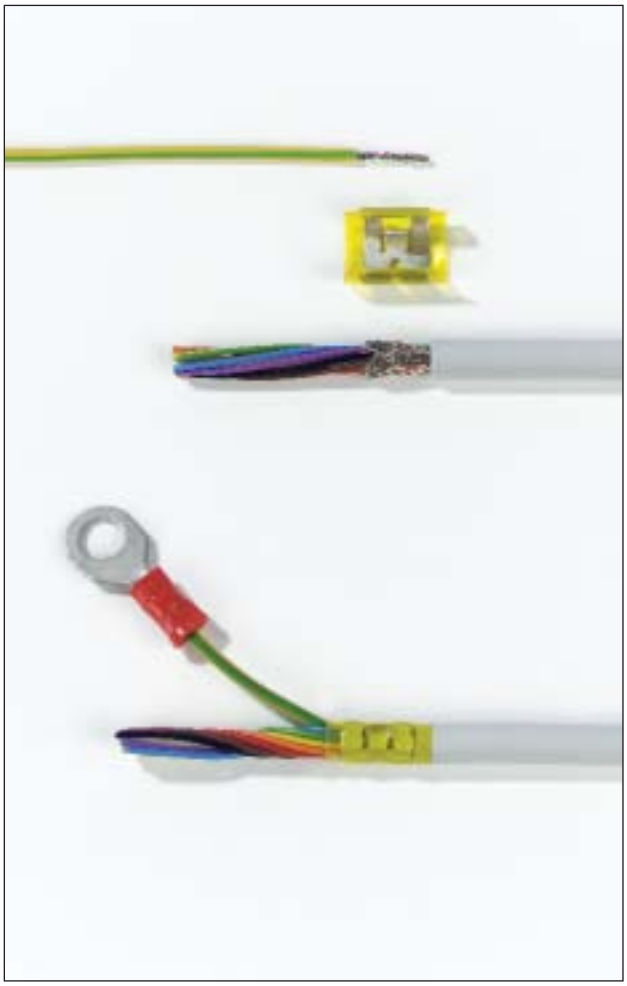
### Fold-back method 2




Fold-back method 2 should be used if the cable shield is applied spirally or if a foil shield is being used.

# 5.4 Shield-Kon®

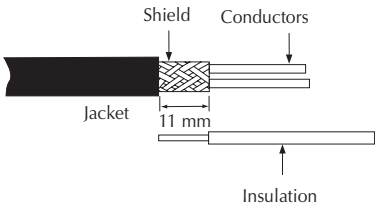
## One-piece connector: Installation methods and procedure



### Installation procedures

**Step 1**

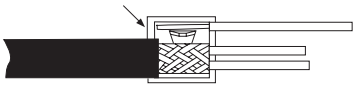
Prepare shielded wire and drain wire insulation as shown.
If two earth wires are required in a Shield-Kon® connection, twist both conductors before insertion into the connector.




**Step 2**

Select the appropriate connector according to the size of the shielded cable (see page 390). Place the drain wire around the trap hook and the shielded wire into the bottom of the connector. When inserting the shielded cable and grounding wire, care must be taken to ensure that their insulation is overlapped by the connector's Polyester insulation film.
100% insulation is possible after crimping when the stripped length of outer jacket (visible shielding) is 11 mm maximum.

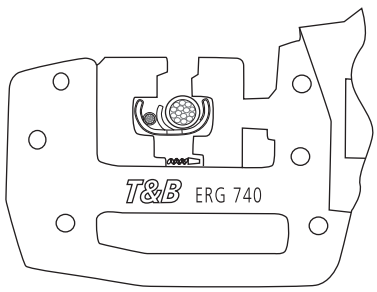
Butt insulating jackets against metal edge



**Step 3**

Select the appropriate die set for the crimp tool, according to the size of the shielded cable (see page 390) and mount the dies on the tool. Insert the connector (with the shielded cable and the drain wire) between the dies of the tool.
Squeeze the tool handles firmly to crimp the connector around the shielding and the drain wire.

Connector opening faces away from tool



# Shield-Kon®

## One-piece connector kits

### Product Ref.: RSK-SET

The Shield-Kon® connection system is now available as a comprehensive kit in a robust thermoplastic case which provides all you need to be efficient in the field without any additional tooling.

The case (Product Ref. RSK-SET) contains:
- 1 ergonomic hand tool (Product Ref. ERG-740)
- 1 bench-mount stand
- 1 gauge (Product Ref.) RSK-LEHRE for instant selection of the die and the connector to be used
- All the 13 plastic dies (Product Ref. 101A to 401N, see page 392) to cover a wide range of shielded cable diameters
- 100 pieces of RSK101 (red) connectors
- 100 pieces of RSK201 (blue) connectors
- 100 pieces of RSK301 (yellow) connectors
- 100 pieces of RSK401 (green) connectors

Dimensions of plastic case (L x W x H): 320 x 260 x 75 mm
Weight of plastic case with content: 2.2 kg

### Product Ref.: RSK-SET-IT

Same as Product Ref. RSK-SET, but with a smaller range of plastic dies.

The case (Product Ref. RSK-SET-IT) contains:
- 1 ergonomic hand tool (Product Ref. ERG-740)
- 1 gauge (Product Ref. RSK-LEHRE) for instant selection of the die and the connector to be used
- 1 bench-mount stand
- 4 plastic dies (Product Ref. 101A, 201D, 301G, 401K)
- 100 pieces of RSK101 (red) connectors
- 100 pieces of RSK201 (blue) connectors
- 100 pieces of RSK301 (yellow) connectors
- 100 pieces of RSK401 (green) connectors

Dimensions of plastic case (L x W x H): 320 x 260 x 75 mm
Weight of plastic case with content: 2 kg

5.4

# Shield-Kon®

## One-piece connector: Connector and die selection


### Product Ref.: RSK-LEHRE

The choice of the appropriate connector and die set mainly depends on the size of the shielded cable.
The selection can be done very quickly with the RSK-LEHRE gauge.

1. Remove the outer jacket from the shielded cable, making the shielding visible

2. Insert this stripped end of the cable into the slots located around the gauge. The correct slot will be found when the cable can slide only in the upper part of the slot. If the cable can slide completely to the bottom of the slot, you should try with the smaller adjacent slot.

3. Once the appropriate slot is found, the corresponding RSK connector is defined by the colour of the strip around the slot, whereas the corresponding plastic die set is given by the number marked below the slot (for the metal die set, add prefix “D” to this number)

4. The following table summarises the different combinations of connector / die set, as well as the size of drain wire that can be used

## One-piece Shield-Kon® connectors & die selection table

| | Product ref. | Colour | Shield diameter [mm] | Plastic dies for WT-740 and ERG-740 | Metal dies for ERG-740 | Acceptable drain wire size |
|---|---|---|---|---|---|---|
|  | RSK 101 | red | 1.27-1.79 | 101A | D-101A | 1 or 2 pieces 0.25mm² |
| | | | 1.80-2.28 | 101B | D-101B | |
|  | RSK 201 | blue | 2.29-2.55 | 201C | D-201C | 1 or 2 pieces 0.25mm² or 1 piece 0.5mm² |
| | | | 2.56-3.00 | 201D | D-201D | |
| | | | 3.01-3.34 | 201E | D-201E | |
| | | | 3.35-3.65 | 201F | D-201F | |
|  | RSK 301 | yellow | 3.66-4.13 | 301G | D-301G | 1 or 2 pieces 0.25mm² or 1 piece 0.5mm² |
| | | | 4.14-4.71 | 301H | D-301H | |
| | | | 4.72-5.12 | 301J | D-301J | |
|  | RSK 401 | green | 5.13-5.86 | 401K | D-401K | 1 or 2 pieces 0.5mm² or 1 piece 0.75mm² |
| | | | 5.87-6.36 | 401L | D-401L | |
| | | | 6.37-7.00 | 401M | D-401M | |
| | | | 7.01-7.62 | 401N | D-401N | |

## Standard hand tool

### Product Ref.: WT740

- Standard hand tool
- MIL specified
- Robust construction: metallic frame, partially covered with plastic
- Can be used only with plastic dies (see page 392)
- All the dies are easily interchangeable
- Parallel action crimp
- Shure-Stake™ mechanism: once pressing has commenced, the tool can be re-opened only after successful completion of the crimping cycle
- Supplied in a wood box containing 1 tool (dies to be ordered separately)

Dimensions of tool (L x W x H): 254 x 97 x 12 mm
Weight of tool: 795 g

## Ergonomic hand tools

### Product Ref.: ERG-740

- Ergonomic hand tool
- Robust construction: metallic frame, partially covered with plastic
- Can be used either with plastic dies (see page 392) for small volume or with metal dies (see page 393) for medium to high volume applications
- All the dies are easily interchangeable (to be ordered separately)
- Parallel action crimp
- Shure-Stake™ mechanism: once pressing has commenced, the tool can be re-opened only after successful completion of the crimping cycle
- Supplied in a plastic case with:
  - 1 tool
  - 1 bench-mount stand for easier use in volume production
  - 1 gauge (Product Ref. RSK-LEHRE) for instant selection of the die and the connector to be used

Dimensions of tool (L x W x H): 210 x 155 x 25 mm
Weight of tool: 470 g
Dimensions of plastic case (L x W x H): 245 x 210 x 55 mm
Weight of plastic case with content: 930 g

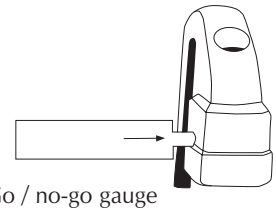
### Product Ref.: ERG740-01

Same as ERG-740, but supplied in a plastic case with:
- 1 tool
- 1 bench-mount stand for easier use in mass production
- 1 RSK-LEHRE gauge for instant selection of the die and the connector to be used
- 1 metal die D-101A
- 1 metal die D-201D
- 1 metal die D-301G
- 1 metal die D-401K

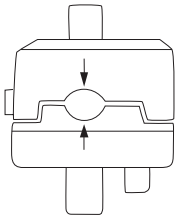
Dimensions of plastic case (L x W x H): 245 x 210 x 55 mm
Weight of plastic case with content: 1200 g

## Plastic dies

- Ideal for small volume productions (up to a few hundred cycles maximum): prototyping, repair, etc
- Made of high quality polymer, in the same colour as the corresponding connector
- Go / no-go gauges available (to be ordered separately) to inspect the wearing condition
- Can be mounted on ERG740 and WT740 tools
- The Product Ref. is marked on the upper part and on the lower part of the die set
- Packaging: 1 die set in a plastic box with Euroslot
- Weight: approx. 20 g (33 g with the packaging)
- Packaging size (L x W x H): 40 x 25 x 70 mm

Go / no-go gauge



## Ordering Information: plastic dies for ERG740 and WT740

| Die Product Ref. | Die colour | Shield diameter [mm] | For connector | Gauge product ref. |
|---|---|---|---|---|
| 101A | red | 1.27 - 1.79 | RSK 101 red | 101AG |
| 101B | red | 1.80 - 2.28 | RSK 101 red | 101BG |
| 201C | blue | 2.29 - 2.55 | RSK 202 blue | 201CG |
| 201D | blue | 2.56 - 3.00 | RSK 202 blue | 201DG |
| 201E | blue | 3.01 - 3.34 | RSK 202 blue | 201EG |
| 201F | blue | 3.35 - 3.65 | RSK 202 blue | 201FG |
| 301G | yellow | 3.66 - 4.13 | RSK 301 yellow | 301GG |
| 301H | yellow | 4.14 - 4.71 | RSK 301 yellow | 301HG |
| 301J | yellow | 4.72 - 5.12 | RSK 301 yellow | 301JG |
| 401K | green | 5.13 - 5.86 | RSK 401 green | 401KG |
| 401L | green | 5.87 - 6.36 | RSK 401 green | 401LG |
| 401M | green | 6.37 - 7.00 | RSK 401 green | 401MG |
| 401N | green | 7.01 - 7.62 | RSK 401 green | 401NG |

## Metal dies

- For mass production and medium to high volumes
- Made of hardened steel, does not wear
- Only for the ERG740 hand tool
- The Product Ref. is engraved on the upper part and on the lower part of the die set
- Marked with a dot having the same colour as the corresponding connector
- Packaging: 1 die set in a cardboard box with Euroslot
- Weight: approx. 75 g
- Packaging size (L x W x H): 45 x 45 x 70 mm

## Ordering Information: metal dies for ERG-740

| Die Product Ref. | Die Colour | Shield diameter [mm] | For connector |
|---|---|---|---|
| D-101A | red | 1.27 - 1.79 | RSK 101 red |
| D-101B | red | 1.80 - 2.28 | RSK 101 red |
| D-201C | blue | 2.29 - 2.55 | RSK 202 blue |
| D-201D | blue | 2.56 - 3.00 | RSK 202 blue |
| D-201E | blue | 3.01 - 3.34 | RSK 202 blue |
| D-201F | blue | 3.35 - 3.65 | RSK 202 blue |
| D-301G | yellow | 3.66 - 4.13 | RSK 301 yellow |
| D-301H | yellow | 4.14 - 4.71 | RSK 301 yellow |
| D-301J | yellow | 4.72 - 5.12 | RSK 301 yellow |
| D-401K | green | 5.13 - 5.86 | RSK 401 green |
| D-401L | green | 5.87 - 6.36 | RSK 401 green |
| D-401M | green | 6.37 - 7.00 | RSK 401 green |
| D-401N | green | 7.01 - 7.62 | RSK 401 green |

# Shield-Kon®

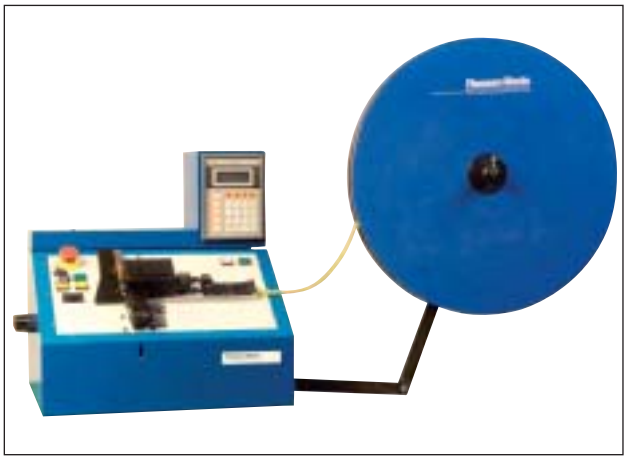
## One-piece connector: Tooling

### Semi-automatic machine

For high volume applications, the one-piece Shield-Kon® connectors can also be supplied on reels, for an installation with the semi-automatic machine WT-EWCT20.

**Product Ref.: WT-EWCT20**

- Semi-automatic tool for mass production
- Terminates shields on round cables
- For one-piece Shield-Kon® connectors on reel (red, blue, yellow, green) for shield diameters from 1.27 mm to 7.62 mm
- The connectors on reel have the same technical specifications as the loose piece connectors
- Each colour coded connector on reel is crimped with its appropriate adaptor and die set - see selection table
- The selection of the connector can also be done with the RSK-Lehre gauge (see page 390)
- Computer controlled quality
- The crimp pressure and quantity are displayed
- Built-in crimp test facility
- Compact desktop design



### Technical Information

| | |
|---|---|
| Operating voltage & frequency | 220 - 240 V, 50Hz |
| Activation | Foot controlled switch (pedal) |
| Performance | Up to 450 crimps per hour |

According to the connector size, which depends on the shielded cable size, the WT-EWCT20 machine requires an adaptor set and a die set that can be selected in the table below.

### Ordering Information: selection table for one-piece Shield-Kon® on reel

| Product Ref. | Colour | Reel quantity [pieces] | Shield diameter [mm] | Tool dies | Die adaptor | Drain wire (Braid) |
|---|---|---|---|---|---|---|
| RSK 101 F | red | 5000 | 1.27-2.28 | WT-ECT101A | WT-ECT11 | 1 or 2 pieces 0.25mm² |
| RSK 201 F | blue | 3000 | 2.29-3.65 | WT-ECT201D | WT-ECT12 | 1 or 2 pieces 0.25mm² or 1 piece 0.5mm² |
| RSK 301 F | yellow | 2000 | 3.66-5.12 | WT-ECT301G | WT-ECT13 | 1 or 2 pieces 0.25mm² or 1 piece 0.5mm² |
| RSK 401 F | green | 1400 | 5.13-7.62 | WT-ECT401K | WT-ECT14 | 1 or 2 pieces 0.5mm² or 1 piece 0.75mm² |

# Shield-Kon®

## Two-piece connector: Overview

The Shield-Kon® two-piece shield termination system from Thomas & Betts consists of 2 cylindrical sleeves: an inner sleeve, with a smaller diameter, and an outer sleeve, which has a larger diameter but which is shorter and less hard than the inner sleeve. All inner and outer sleeves are colour-coded according to their size.

The conductors of the cable are inserted through the inner sleeve, whereas the shield (braided or foiled) and the drain wire are inserted between the 2 sleeves. The crimp operation is done by compressing the outer sleeve with a tool, while the inner sleeve ensures a mechanical protection to the inner conductors.

This unique shield termination system can be used with cables having a diameter of dielectric (after removing the outer insulation and the shield) between 1.1 mm and 36 mm.

In the **"Hexagonal Range"** (diameters of dielectric between 1.1 mm and 9.4 mm), the outer sleeve is crimped with a hand tool and the result is a hexagonal-shaped crimp. This range is used to crimp shielded and coaxial cables.

The **"Circular Range"**, for Multiple or Overall shielded cables, refers to larger diameters of dielectric (between 9.5 and 36 mm) and owes its name to the circular shape of the crimp.

## Two-piece connector: the Hexagonal Range

The Thomas & Betts hexagonal compression (for diameters of dielectric up to 9.4 mm) is a reliable method for grounding, terminating and insulating shielded and coaxial cable.

It has literally hundreds of millions of installations in communications, aerospace, electronic, telephone, radio and TV applications.

Hexagonal range

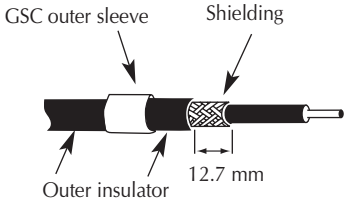
Circular range

# 5.4 Shield-Kon®

## Two-piece connector: Installation methods in the Hexagonal Range

Three installation methods are possible in the hexagonal range, for a quick, neat and accurately completed termination...at a greatly reduced production cost.

### Method 1: Standard

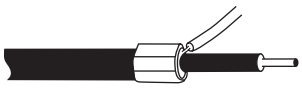



A. After stripping the shield (13 mm in length), slip the outer sleeve over the outer insulation. If this is too big, slip the outer sleeve on, after method described in Fig. 3.


B. Widen the braided shield by gently rotating the inner conductor, then slip the inner sleeve under the braided shield.

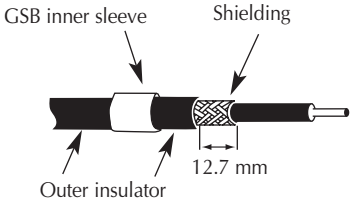
C. Position the inner sleeve so that about 1.6 mm protrudes beyond the end of the braided shield.

D. Slip the drain wire (0.25–0.5 mm²) under the outer sleeve (from the front or behind) and slip the outer sleeve over the braided shield.

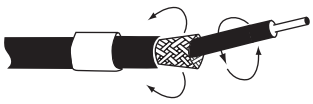


E. Position the outer sleeve and ensure that the ends of all wires in the braided shield and drain wire are covered. Crimp both sleeves with the correct tool and tool die. Finished.

### Method 2:



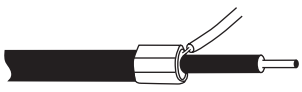

A. After stripping the shield (13 mm in length), slip the inner sleeve over the outer insulation.



B. Widen the braided shield by gently rotating the inner conductor.

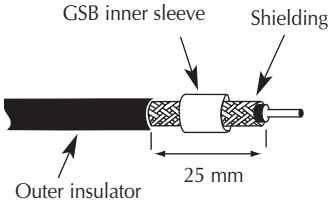

C. Fold back the braided shield over the inner sleeve and slip the outer sleeve over the braided shield

D. Slip the drain wire (0.25–0.5 mm²) under the outer sleeve (from the front or behind) and slip the outer sleeve over the braided shield.

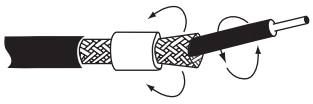


E. Position the outer sleeve and ensure that the ends of all wires in the braided shield and drain wire are covered. Crimp both sleeves with the correct tool and tool die. Finished.

### Method 3:



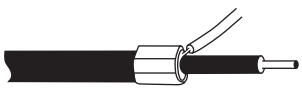

A. After stripping the shield (25 mm in length), slip the inner sleeve over the braided shield



B. Widen the braided shield by gently rotating the inner conductor.


C. Fold back the braided shield over the inner sleeve and slip the outer sleeve over the braided shield

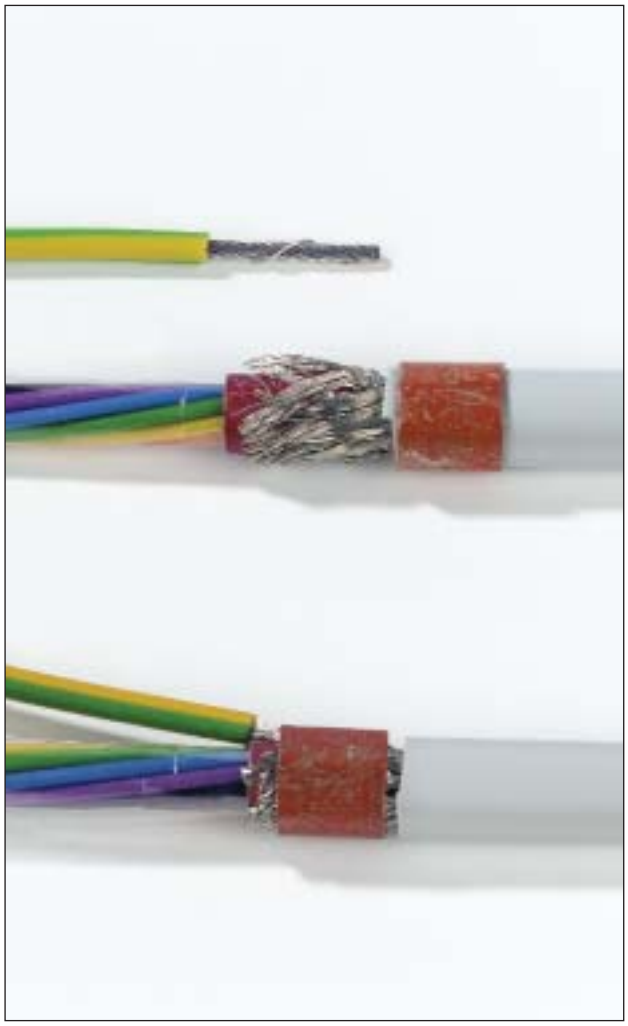
D. Slip the drain wire (0.25–0.5 mm²) under the outer sleeve (from the front or behind) and slip the outer sleeve over the braided shield.



E. Position the outer sleeve and ensure that the ends of all wires in the braided shield and drain wire are covered. Crimp both sleeves with the correct tool and tool die. Finished.

# Shield-Kon®

## Two-piece connector: Connector and die selection in the Hexagonal Range



The choice of the appropriate combination of inner sleeve, outer sleeve and crimp tool / die will depend on the diameter of the dielectric.

However, a direct correlation with the diameter of the dielectric is not possible, as several different inner sleeves can be combined with the same outer sleeve (according to the type of shield).

With the directions shown below, a measuring instrument (calliper) is all that is required to make the right selection in 3 steps:

### 1. Selection of the inner sleeve (GSB)

- Strip the outer insulator and remove the shield
- Measure the maximum value of the diameter of the dielectric (diameter without shield) by gently rotating the cable. When doing so, it should be possible to turn the cable easily between the jaws of the calliper
- Add 0.13 mm to the measured value. The sum will give the Inner Diameter (I.D.) of the GSB inner sleeve
- In the table, select the GSB inner sleeve having this I.D. or the nearest larger I.D

### 2. Selection of the outer sleeve (GSC)

**Normal method:**

- Slide the selected inner sleeve underneath the shield of the cable
- Measure the maximum diameter with the shield over the inner sleeve
- Add 0.8 mm to the measured value. The sum will give the Inner Diameter (I.D.) of the GSC sleeve
- In the table, select the GSC sleeve having this I.D. or the nearest larger I.D.

**Quick method:**

In most cases, a quicker method can be used to define the correct GSC outer sleeve:

- Once the appropriate GSB inner sleeve is found, the table will give the Outer Diameter (O.D.) of this GSB sleeve
- Add 1.5 mm to this O.D. and the sum will give the Inner Diameter (I.D.) of the GSC sleeve
- In the table, select the GSC sleeve having this I.D. or the nearest larger I.D.

### 3. Selection of the die

The Product Ref. for the appropriate die is given in the table hereafter, in the same row as the GSC sleeve that has just been defined and in the column of the chosen tool.

# 5.4 Shield-Kon®

## Two-piece connector: Connector and die selection in the Hexagonal Range

## Technical Information: Inner sleeve

| | |
|---|---|
| Material | Hard bronze |
| Finish*** | Tin plated (per MIL-T-10727A) |
| Length | 7.9 mm |

## Technical Information: Outer sleeve

| | |
|---|---|
| Material | Soft bronze |
| Finish*** | Tin plated (per MIL-T-10727A) |
| Length | 6.4 mm |

## Ordering Information

| Product Ref. GSB | Colour code | Inner diameter [mm] | Outer diameter [mm] | Product ref. GSC | Colour code | Inner diameter [mm] | Outer diameter [mm] | Hand tool ERG2000KE | Nest number | Hand tool* WT440/WT540 MIL - Spec. |
|---|---|---|---|---|---|---|---|---|---|---|
| **INNER SLEEVES** | | | | **OUTER SLEEVES** | | | | **DIES** | | |
| GSB 046 | silver | 1.17 | 1.90 | GSC 101 | silver | 2.56 | 3.16 | D-419403 | 19 | 4419 |
| GSB 058 | yellow | 1.47 | 2.10 | GSC 128 | blue | 3.25 | 3.86 | D-419403 | 00 | 4400 |
| GSB 063 | red | 1.60 | 2.23 | GSC 149 | purple | 3.78 | 4.54 | D-419403 | 01 | 4401 |
| GSB 071 | green | 1.87 | 2.44 | GSC 156 | yellow | 3.96 | 4.90 | D-419403 | 02 | 4402 |
| GSB 080 | blue | 2.00 | 2.63 | GSC 175 | blue | 4.45 | 5.46 | D-419403 | 03 | 4403 |
| GSB 090 | orange | 2.20 | 2.90 | GSC 187 | orange | 4.75 | 5.76 | D-406410 | 06 | 4406 |
| GSB 096 | purple | 2.44 | 3.02 | GSC 194 | red | 4.93 | 5.74 | D-406410 | 06 | 4406 |
| GSB 101 | yellow | 2.56 | 3.16 | GSC 199 | silver | 5.05 | 5.97 | D-406410 | 06 | 4406 |
| GSB 109 | red | 2.76 | 3.36 | GSC 205 | yellow | 5.20 | 6.22 | D-406410 | 08 | 4408 |
| GSB 115 | silver | 2.92 | 3.70 | GSC 219 | green | 5.56 | 6.35 | D-406410 | 08 | 4408 |
| GSB 124 | green | 3.14 | 3.68 | GSC 225 | purple | 5.71 | 6.50 | D-406410 | 09 | 4409 |
| GSB 128 | silver | 3.25 | 3.86 | GSC 232 | orange | 5.90 | 6.70 | D-406410 | 10 | 4410 |
| GSB 134 | orange | 3.40 | 4.00 | GSC 261 | yellow | 6.63 | 7.54 | D-411414 | 11 | 4411-SK |
| GSB 149 | blue | 3.78 | 4.54 | GSC 275 | silver | 6.98 | 7.77 | D-411414 | 12 | 4412 |
| GSB 156 | red | 3.96 | 4.90 | GSC 281 | purple | 7.14 | 8.40 | D-411414 | 14 | 4414 |
| GSB 165 | silver | 4.20 | 4.92 | GSC 287 | blue | 7.29 | 8.30 | D-411414 | 14 | 4414 |
| GSB 175 | green | 4.44 | 5.46 | GSC 297 | green | 7.54 | 8.50 | D-411414 | 14 | 4414 |
| GSB 187 | yellow | 4.75 | 5.76 | GSC 312 | yellow | 7.92 | 9.20 | D-415417 | 15 | 4415 |
| GSB 194 | blue | 4.93 | 5.76 | GSC 327 | silver | 8.30 | 9.45 | D-415417 | 16 | 4416 |
| GSB 205 | orange | 5.20 | 6.22 | GSC 348 | orange | 8.84 | 9.98 | D-415417 | 17 | 4417 |
| GSB 219 | silver | 5.56 | 6.35 | GSC 359 | purple | 9.12 | 10.13 | D-450451 | 50 | 5450 |
| GSB 225 | yellow | 5.71 | 6.50 | GSC 375 | yellow | 9.53 | 10.31 | D-450451 | 51 | 5451 |
| GSB 232 | red | 5.90 | 6.70 | GSC 405 | red | 10.28 | 11.50 | D-452 | 52 | 5452 |
| GSB 250 | green | 6.35 | 7.14 | GSC 415 | blue | 10.54 | 11.76 | D-454 | 52 | 5452 |
| GSB 261 | blue | 6.63 | 7.54 | GSC 425 | silver | 10.80 | 12.06 | D-454 | 54 | 5454 |
| GSB 266 | silver | 6.75 | 7.54 | GSC 460 | silver | 11.68 | 12.95 | ERG-5456** | 56 | 5456 |
| GSB 275 | orange | 6.98 | 7.77 | GSC 500 | green | 12.70 | 13.97 | ERG-5457** | 57 | 5457 |
| GSB 281 | yellow | 7.14 | 8.40 | | | | | | | |
| GSB 287 | silver | 7.29 | 8.30 | | | | | | | |
| GSB 297 | red | 7.54 | 8.50 | | | | | | | |
| GSB 312 | purple | 7.92 | 9.20 | | | | | | | |
| GSB 348 | orange | 8.84 | 10.20 | | | | | | | |
| GSB 375 | blue | 9.52 | 10.30 | | | | | | | |

* Dies 4419 and 4400 to 4417 are for the hand tool WT440. Dies 5450 to 5457 are for the hand tool WT540

** Note: Product Ref. ERG-5456 and ERG-5457 are complete hand tools with pre-mounted die set

*** For Nickel plated terminals, add suffix NP to the Product Reference. Example: GSB128NP, GSC128NP

See pages 399 and 401 for tooling specifications

Standard packaging quantity: 1000 pcs. For 100 pcs packaging, add the code ‘5” in the Product Reference just after the “GSB” or “GSC” code

Example: GSC275 = 1000 pcs packaging, GSC5275 = 100 pcs packaging

# Shield-Kon®

## Two-piece connector: Tooling for the Hexagonal Range

### Product Ref.: WT-440 and WT540

- Parallel action hand tool
- MIL-specified
- Frame, with the option of interchangeable steel dies
- A versatile tool, one frame with a selection of dies covers the whole range of shield diameters in the Hexagonal Range
- Shure-Stake™ mechanism: once pressing has commenced, the tool can be re-opened only after successful completion of the crimping cycle

Packaging: wood box containing 1 frame (dies to be ordered separately, see selection chart below for Product References)

## Technical Information: WT-440

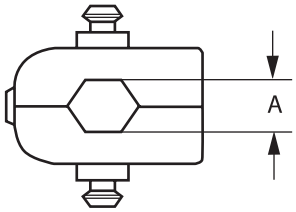
| | |
|---|---|
| Length | 203 mm |
| Weight | 450 g |
| Dies | series 4400 |

## Technical Information: WT-540

| | |
|---|---|
| Length | 264 mm |
| Weight | 540 g |
| Dies | series 5450 |

## Dies for WT-440 tool

- Interchangeable dies with single nest
- Hexagonal crimp
- Material: alloy steel
- Finish: black oxide
- Crimping range (outer sleeves): from GSC101 to GSC348
- Go/no-go gauges are available for inspection

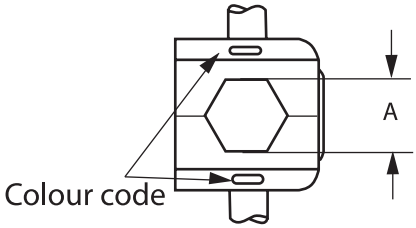



## Ordering Information: dies for WT-440 tool

| Product Ref. | Dim. A across flats (+/- 0.10) [mm] | For connector | Go / no-go gauge |
|---|---|---|---|
| 4419 | 2.67 | GSC101 | 4419-G |
| 4400 | 3.25 | GSC128 | 4400-G |
| 4401 | 3.84 | GSC149 | 4401-G |
| 4402 | 4.06 | GSC156 | 4402-G |
| 4403 | 4.52 | GSC175 | 4403-G |
| 4406 | 5.00 | GSC187, GSC194, GSC199 | 4406-G |
| 4408 | 5.41 | GSC205, GSC219 | 4408-G |
| 4409 | 5.54 | GSC225 | 4409-G |
| 4410 | 5.87 | GSC232 | 4410-G |
| 4411-SK | 6.48 | GSC261 | 4411-G |
| 4412 | 6.81 | GSC275 | 4412-G |
| 4414 | 7.37 | GSC281, GSC287, GSC297 | 4414-G |
| 4415 | 7.85 | GSC312 | 4415-G |
| 4416 | 7.98 | GSC327 | 4416-G |
| 4417 | 8.23 | GSC348 | 4417-G |

## Dies for WT-540 tool

- Interchangeable dies with single nest
- Hexagonal crimp
- Material: alloy steel
- Finish: black oxide
- Marked with the die number and a colour-coded dot
- Crimping range (outer sleeves): from GSC359 to GSC500
- Go/no-go gauges are available for inspection




## Ordering Information: dies for WT-540 tool

| Product Ref. | Dim. A across flats (+/- 0.10) [mm] | Colour code | For connector | Go / no-go gauge |
|---|---|---|---|---|
| 5450 | 8.71 | purple | GSC359 | 5450-G |
| 5451 | 9.12 | yellow | GSC375 | 5451-G |
| 5452 | 9.75 | red | GSC405, GSC415 | 5452-G |
| 5454 | 10.90 | silver | GSC425 | 5454-G |
| 5456 | 11.53 | silver | GSC460 | 5456-G |
| 5457 | 12.07 | green | GSC500 | 5457-G |

# Shield-Kon®

## Two-piece connector: Tooling for the Hexagonal Range

### Product Ref.: ERG2000KE

- Ergonomic hand tool
- Frame, with the option of Interchangeable steel dies
- A versatile tool, one frame with a selection of dies covers a wide range of shield diameters in the Hexagonal Range, up to Product Ref. GSC425 outer sleeve
- Most dies have several nests (identified with a number) to allow the crimp of several GSC outer sleeves with the same die set. The appropriate nest number is shown in the selection chart (page 398)
- Shure-Stake™ mechanism: once pressing has commenced, the tool can be re-opened only after successful completion of the crimping cycle

- Length: 252 mm
- Weight: 460 g

Packaging: cardboard box containing 1 frame (dies to be ordered separately, see selection chart page 398 for Product References)

### Dies for ERG2000KE tool

- Interchangeable dies, with single or multiple nest
- Hexagonal crimp
- Material: alloy steel
- The dies are marked with the die number
- Each nest is marked with a number to identify the GSC outer sleeves that can be crimped (see table)
- Crimping range (outer sleeves): from GSC101 to GSC425
- Packaging: 1 die set in a cardboard box with Euroslot
- Weight: approx. 50 g
- Packaging size (L x W x H): 45 x 45 x 70mm

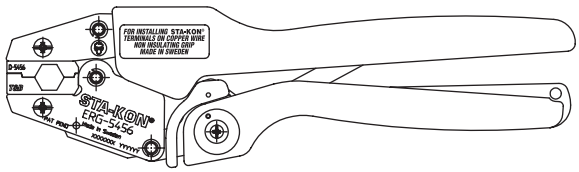
## Ordering Information: dies for ERG2000KE

| Technical drawing | Product Ref. | Nest nr. | For connector | dimension of the nest [mm] | Gauge dimensions Ø Go [mm] | Ø No-go [mm] |
|---|---|---|---|---|---|---|
|  | D-419403 | 19 | GSC101 | HEX 2.68 | 2.63 | 2.73 |
| | | 00 | GSC128 | HEX 3.24 | 3.19 | 3.29 |
| | | 01 | GSC149 | HEX 3.80 | 3.75 | 3.85 |
| | | 02 | GSC156 | HEX 4.03 | 3.98 | 4.08 |
| | | 03 | GSC175 | HEX 4.50 | 4.45 | 4.55 |
|  | D-406410 | 6 | GSC187, GSC194, GSC199 | HEX 5.00 | 4.95 | 5.05 |
| | | 8 | GSC205, GSC219 | HEX 5.36 | 5.31 | 5.41 |
| | | 9 | GSC225 | HEX 5.56 | 5.51 | 5.61 |
| | | 10 | GSC232 | HEX 5.84 | 5.79 | 5.89 |
|  | D-411414 | 11 | GSC261 | HEX 6.46 | 6.41 | 6.51 |
| | | 12 | GSC275 | HEX 6.78 | 6.73 | 6.83 |
| | | 14 | GSC281, GSC287, GSC297 | HEX 7.32 | 7.27 | 7.37 |
|  | D-415417 | 15 | GSC312 | HEX 7.74 | 7.69 | 7.79 |
| | | 16 | GSC327 | HEX 7.86 | 7.81 | 7.91 |
| | | 17 | GSC348 | HEX 8.32 | 8.27 | 8.37 |
|  | D-450451 | 50 | GSC359 | HEX 8.66 | 8.61 | 8.71 |
| | | 51 | GSC375 | HEX 9.10 | 9.05 | 9.15 |
|  | D-452 | 52 | GSC405 | HEX 9.72 | 9.67 | 9.77 |
|  | D-454 | 54 | GSC415, GSC425 | HEX 10.88 | 10.83 | 10.93 |

### Product Ref.: ERG5456

- Fixed die, ergonomic hand tool
- Designed to crimp the GSC460 outer sleeve
- Shure-Stake™ mechanism: once pressing has commenced, the tool can be re-opened only after successful completion of the crimping cycle
- Length: 252 mm
- Weight: 460 g

ERG5456

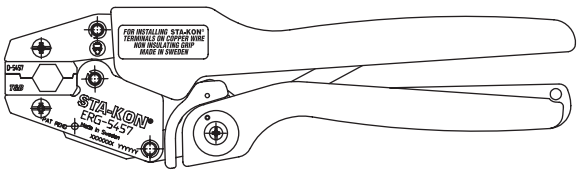



Packaging: cardboard box containing 1 tool with pre-mounted die set

### Product Ref.: ERG5457

- Fixed die, ergonomic hand tool
- Designed to crimp the GSC500 outer sleeve
- Shure-Stake™ mechanism: once pressing has commenced, the tool can be re-opened only after successful completion of the crimping cycle
- Length: 252 mm
- Weight: 460 g

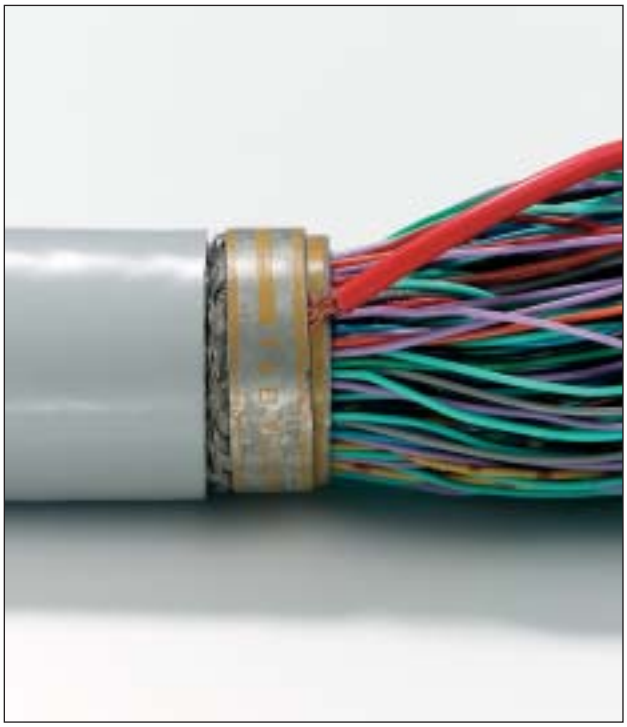
ERG5457




Packaging: cardboard box containing 1 tool with pre-mounted die set

# 5.4 Shield-Kon®

## Two-piece connector: the Circular Range



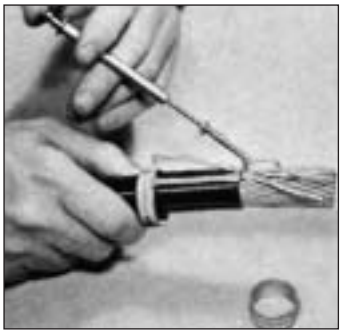
The Shield-Kon® Connector System for multiple-conductor shielded cable is based on the principle of cold swaging. It uses a two-piece compression connector, which is colour-coded to match the proper die. The connector consists of a hard brass collector inner sleeve (ring) and a soft copper compression outer sleeve (ring). Each set of rings and matching installing die will connect a minimum of 5 shielding braids with one ground wire. The maximum number of braids is limited only by the space between the inner and outer rings.

The design advantages are:

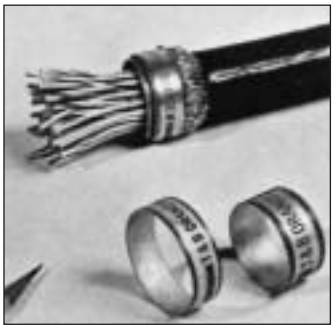
1. Positive selection of inner and outer rings and installing die by a complete colour-coded system.
2. A more reliable grounding termination because only one ground wire connection is made - conventional daisy chain jumper method is eliminated.
3. Smaller, more compact bundle is easy to inspect.
4. Only one ground wire is required, however additional ground wires may be used if needed.
5. Smooth insulator protects conductor insulation.
6. With one stroke of the tool, the interlace die will produce a 360° compression uniformly securing all individual shields around the connector.

## Two-piece connector: Installation method in the Circular Range

1. After overall insulation is removed to expose shielded cables, each conductor must be freed from the shielding braid. The Thomas & Betts lead extractor tools (see page 404) simplifies this operation by pushing the inner conductor through an opening in the shielding braid. The braid is then folded back until all conductors are freed.



2. Flattened shielding braids are evenly distributed around the periphery of the GSB inner ring.



3. Position the GSC outer ring over the flattened shielding braid, locating it over the centre of the GSB inner ring. Braid may be trimmed even with the edge of the outer compression ring before or after compression. Ground wire or wires may be inserted between the outer ring and the shield prior to compression.

# Shield-Kon®

## Two-piece connector: Connector and die selection in the Circular Range

The choice of the appropriate combination of inner ring, outer ring and crimp tool / die will depend on the overall diameter of the inner conductors (underneath the shield)

In the case of the Circular range, there is a direct correlation between the diameter of the inner conductors and the inner and outer rings.

With the directions shown below, a measuring instrument (calliper) is all that is required to make the right selection.

### Selection of the GSB inner ring

- Measure the maximum value of the overall diameter of the inner conductors (underneath the flattened shield) by gently rotating the cable. When doing so, it should be possible to turn the cable easily between the jaws of the calliper
- Add 0.13 mm to the measured value. The sum will give the Inner Diameter (I.D.) of the GSB inner ring
- In the table, select the GSB inner ring having this I.D. or the nearest larger I.D

### Selection of the GSC outer ring and of the die

Once the appropriate GSB inner ring is found, the table hereafter immediately gives the corresponding GSC outer ring and the appropriate die for the 13640 hydraulic head.

### Technical Information: Inner sleeve

| | |
|---|---|
| Material | Copper alloy ASTM B135 |
| Finish | Electro tin plated (per MIL-T-10727A) |
| Length | 15.2 mm |

### Technical Information: Outer sleeve

| | |
|---|---|
| Material | Copper ASTM B188 |
| Finish | Electro tin plated (per MIL-T-10727A) |
| Length | 11.2 mm |

## Ordering Information

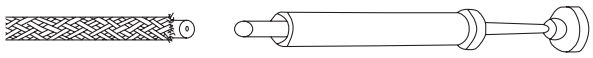
| Product Ref. GSB | Colour code | Inner Diameter [mm] | Outer [mm] | Product Ref. GSC | Colour code | Inner Diameter [mm] | Outer [mm] | Hydraulic crimp head 13640 MIL-Spec. |
|---|---|---|---|---|---|---|---|---|
| **INNER SLEEVES** | | | | **OUTER SLEEVES** | | | | **DIES** |
| GSB 430 | red | 10.92 | 12.70 | GSC 590 | red | 14.99 | 17.02 | GS 590 |
| GSB 550 | blue | 13.97 | 15.75 | GSC 710 | blue | 18.03 | 20.07 | GS 710 |
| GSB 670 | silver | 17.02 | 19.05 | GSC 840 | silver | 21.34 | 23.37 | GS 840 |
| GSB 810 | brown | 20.57 | 22.35 | GSC 1010 | brown | 25.65 | 27.61 | GS 1010 |
| GSB 920 | green | 23.37 | 25.40 | GSC 1130 | green | 28.70 | 30.73 | GS 1130 |
| GSB 1040 | pink | 26.42 | 28.45 | GSC 1250 | pink | 31.75 | 33.78 | GS 1250 |
| GSB 1122 | orange | 28.50 | 30.28 | GSC 1332 | orange | 33.83 | 35.87 | GS 1332 |
| GSB 1224 | purple | 31.09 | 32.87 | GSC 1440 | purple | 36.58 | 38.61 | GS 1440 |
| GSB 1353 | yellow | 34.37 | 36.14 | GSC 1563 | yellow | 39.70 | 41.73 | GS 1563 |
| GSB 1425 | red | 36.20 | 39.24 | GSC 1670 | red | 42.42 | 44.45 | GS 1670 |

Standard packaging quantity: 50 pcs

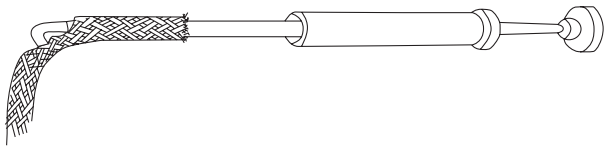
# Shield-Kon®

## Two-piece connector: Tooling for the Circular Range

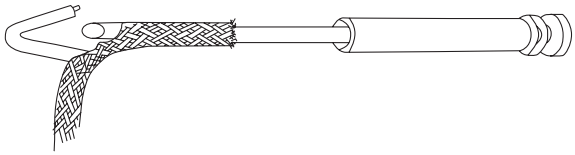
### Lead extractors



After the insulation is stripped off, flare the exposed braid. Push the flared end of braid back causing the braid to bulge.



Retract the plunger and slide the tube over the wire until the desired breakout point is reached.



### Ordering Information

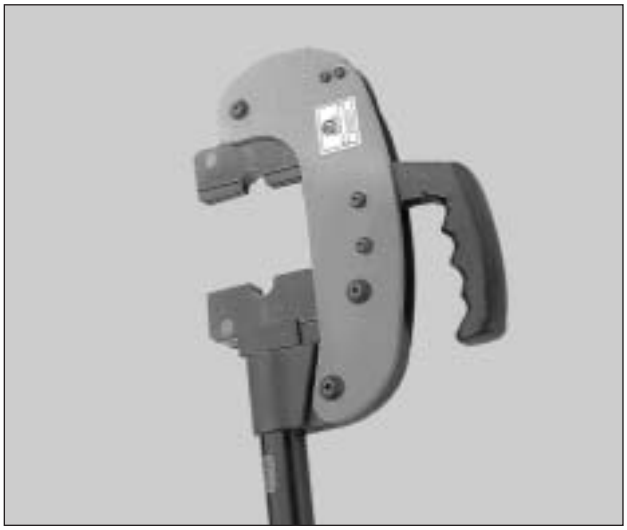
| Lead extractor Product Ref. | For lead diameter up to [mm] | Plunger colour-code |
|---|---|---|
| WT-045B | 1.14 | Red |
| WT-060W | 1.57 | White |
| WT-080G | 2.36 | Blue |
| WT-100B | 3.17 | Green |
| WT-130Y | 3.56 | Yellow |

### Hydraulic head

All the 2-piece Shield-Kon® in the circular range need to be crimped with the 13640 hydraulic head equipped with the appropriate die.

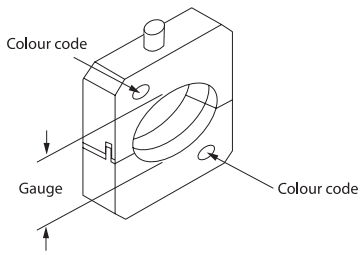
**Product Ref.: 13640**

- Hydraulic tool head
- 3.5 ton nominal pressure (output)
- For 2-piece Shield-Kon® terminals in the circular range
- Pioneer coupling, for quick assembly
- Requires a 9800 PSI (approx. 676 bar) operating service pressure (input)
- Quickly interchangeable steel dies (to be ordered separately)
- Length: 400 mm approx.
- Weight: 5.5 kg approx.



### Dies for 13640 hydraulic crimp head

- Interchangeable dies with single nest
- Circular crimp
- Material: alloy steel
- Finish: black oxide
- Marked with the die number and a colour-coded dot
- Crimping range (outer sleeves): from GSC590 to GSC1670
- Go/no-go gauges are available for inspection




### Ordering Information

| Product Ref. | Gauge Ø min. [mm] | Gauge Ø max. [mm] | Colour code | For connector | Go / no-go gauge |
|---|---|---|---|---|---|
| GS590 | 14.91 | 15.16 | red | GSC590 | GS590-G |
| GS710 | 17.96 | 18.21 | blue | GSC710 | GS710-G |
| GS840 | 21.26 | 21.51 | grey | GSC840 | GS840-G |
| GS1010 | 24.59 | 24.84 | brown | GSC1010 | GS1010-G |
| GS1130 | 27.66 | 27.91 | green | GSC1130 | GS1130-G |
| GS1250 | 30.71 | 30.96 | pink | GSC1250 | GS1250-G |
| GS1332 | 32.54 | 32.79 | orange | GSC1332 | GS1332-G |
| GS1440 | 35.13 | 35.38 | purple | GSC1440 | GS1440-G |
| GS1563 | 38.40 | 38.66 | yellow | GSC1563 | GS1563-G |
| GS1670 | 41.00 | 41.25 | red | GSC1670 | GS1670-G |

## Pumps

A small selection of pumps to operate the 13640 head is shown below (please contact your Sales Office for availability of other types of pumps).

### Product Ref.: 13810E

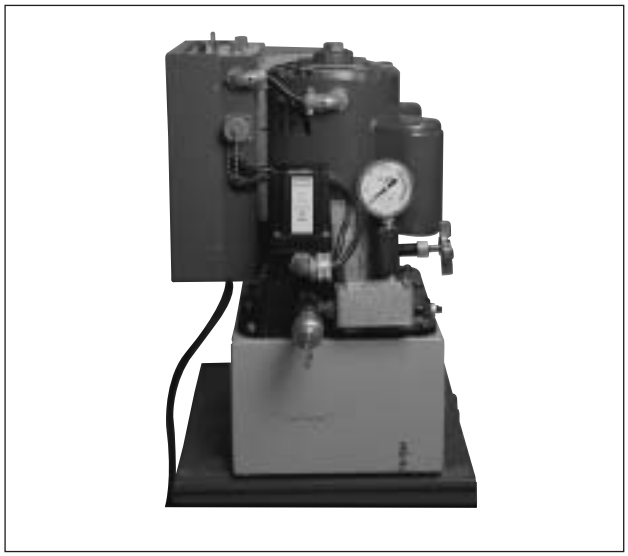
- Hydraulic pump, electrical power
- Service pressure (output): 10.000 psi (690 bar)
- Motor power: 1 1/2 HP - 12 Amp
- Voltage & frequency: 230V - 50 Hz
- Capability: 3800 cc / min at 200 psi (13.8 bar)
  1000 cc / min at 8000 psi (552 bar)
- Reservoir volume: 7.6 l
- Coupling: Pioneer fitting
- Dimensions (L x W x H): 275 x 381x 522 mm
- Weight: 27 kg without oil

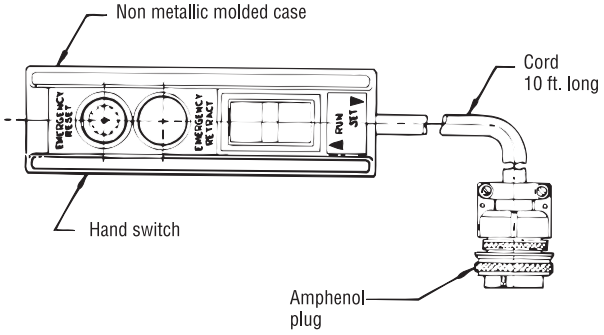
**Accessories:**
- **Product Ref. 13611:** hand switch
- **Product Ref. 13612:** foot switch
- **Product Ref. 13613:** hydraulic hose 1.82 m long, with Pioneer couplings
- **Product Ref. 21061:** hydraulic oil (0.95l can)

### Product Ref.: 13606

- Hydraulic pump, foot (or hand) activated
- Service pressure (output): 10.000 psi (690 bar)
- Over-pressure security valves
- Coupling: Pioneer fitting
- Dimensions (L x W x H): 597 x 133 x 165 mm
- Weight: 10.4 kg

**Accessories:**
- **Product Ref. 13613:** hydraulic hose 1.82 m long, with Pioneer couplings



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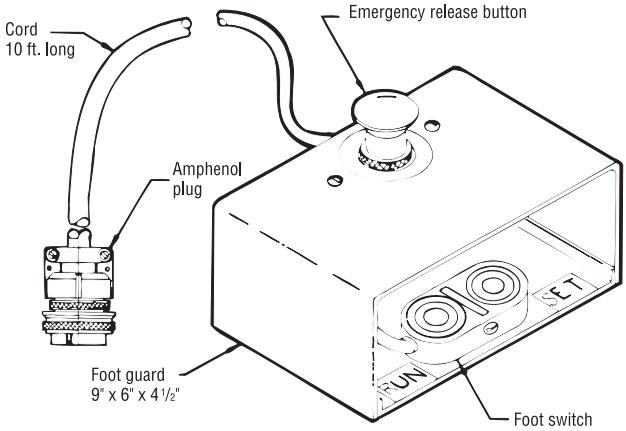


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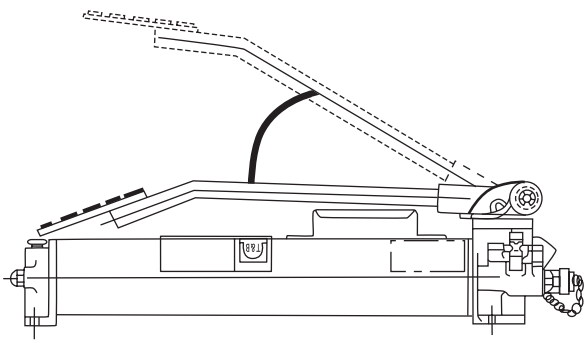

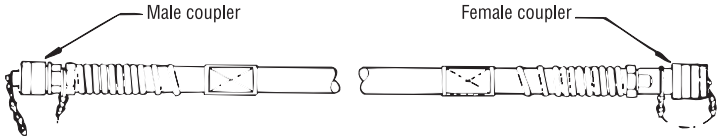


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