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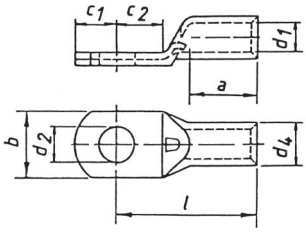



## Tubular cable lugs, copper 0.75 - 6 mm²

Ring type

**for fine stranded conductors**

### Characteristics

- With inspection hole
- Annealed material optimises material and crimping characteristics

### Material

- Copper to EN 13600

### Surface

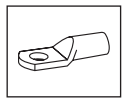
- Tin plated

| Cross-section | Size of bolt | | Dimensions mm | | | | | | | | Weight/ 100 pcs. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mm² | Ø | Part No. | d1 | a | b | d2 | d4 | c1 | c2 | l | ~ kg | pcs. |
| 0.75 | M3 | **91R3** | 1.3 | 6 | 6.0 | 3.2 | 2.8 | 3.25 | 4.0 | 12 | 0.060 | 100 |
| | M4 | **91R4** | 1.3 | 6 | 6.5 | 4.3 | 2.8 | 4.00 | 5.0 | 13 | 0.060 | 100 |
| | M5 | **91R5** | 1.3 | 6 | 7.5 | 5.3 | 2.8 | 4.75 | 5.5 | 14 | 0.060 | 100 |
| 1.5 | M3 | **92R3** | 1.8 | 6 | 6.5 | 3.2 | 3.3 | 3.25 | 4.0 | 12 | 0.080 | 100 |
| | M4 | **92R4** | 1.8 | 6 | 6.5 | 4.3 | 3.3 | 4.00 | 5.0 | 13 | 0.080 | 100 |
| | M5 | **92R5** | 1.8 | 6 | 7.5 | 5.3 | 3.3 | 4.75 | 5.5 | 14 | 0.080 | 100 |
| | M6 | **92R6** | 1.8 | 6 | 9.0 | 6.5 | 3.3 | 6.50 | 6.5 | 16 | 0.090 | 100 |
| 2.5 | M3 | **93R3** | 2.3 | 6 | 7.5 | 3.2 | 4.2 | 3.25 | 4.0 | 12 | 0.120 | 100 |
| | M4 | **93R4** | 2.3 | 6 | 7.5 | 4.3 | 4.2 | 4.00 | 5.0 | 13 | 0.120 | 100 |
| | M5 | **93R5** | 2.3 | 6 | 8.5 | 5.3 | 4.2 | 4.75 | 5.5 | 14 | 0.130 | 100 |
| | M6 | **93R6** | 2.3 | 6 | 9.5 | 6.5 | 4.2 | 6.50 | 6.5 | 16 | 0.150 | 100 |
| | M8 | **93R8** | 2.3 | 6 | 13.0 | 8.5 | 4.2 | 7.75 | 9.5 | 20 | 0.180 | 100 |
| 4 | M4 | **94R4** | 3.0 | 8 | 8.5 | 4.3 | 5.0 | 4.75 | 5.5 | 18 | 0.210 | 100 |
| | M5 | **94R5** | 3.0 | 8 | 9.0 | 5.3 | 5.0 | 4.75 | 6.0 | 18 | 0.213 | 100 |
| | M6 | **94R6** | 3.0 | 8 | 10.0 | 6.5 | 5.0 | 6.50 | 6.5 | 19 | 0.220 | 100 |
| | M8 | **94R8** | 3.0 | 8 | 13.0 | 8.5 | 5.0 | 8.50 | 9.5 | 22 | 0.280 | 100 |
| 6 | M4 | **95R4** | 4.0 | 9 | 9.5 | 4.3 | 6.0 | 5.00 | 5.5 | 18 | 0.290 | 100 |
| | M5 | **95R5** | 4.0 | 9 | 9.5 | 5.3 | 6.0 | 6.00 | 6.0 | 19 | 0.300 | 100 |
| | M6 | **95R6** | 4.0 | 9 | 10.0 | 6.5 | 6.0 | 7.00 | 6.5 | 19 | 0.300 | 100 |
| | M8 | **95R8** | 4.0 | 9 | 14.0 | 8.5 | 6.0 | 8.50 | 9.5 | 22 | 0.320 | 100 |

▶ Tool: see chart page 44

## Tubular cable lugs, copper 0.75 - 16 mm²

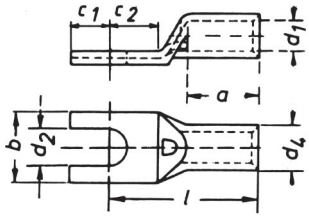
Fork type



- **For direct screw-mounting**
- **for fine stranded conductors**

### Characteristics

- With inspection hole
- Annealed material optimises material and crimping characteristics




### Material

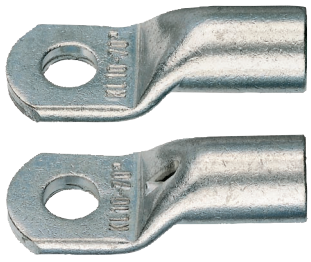
- Copper to EN 13600

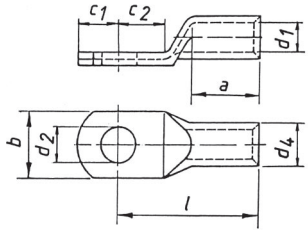
### Surface

- Tin plated

| Cross-section | Size of bolt | | Dimensions mm | | | | | | | | Weight/ 100 pcs. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mm² | Ø | Part No. | d1 | a | b | d2 | d4 | c1 | c2 | l | ~ kg | pcs. |
| 0.75 | M3 | **91C3** | 1.3 | 6 | 6.0 | 3.2 | 2.8 | 3.25 | 4.0 | 12 | 0.06 | 100 |
| | M4 | **91C4** | 1.3 | 6 | 6.5 | 4.3 | 2.8 | 4.00 | 5.0 | 13 | 0.05 | 100 |
| | M5 | **91C5** | 1.3 | 6 | 7.5 | 5.3 | 2.8 | 4.75 | 5.5 | 14 | 0.06 | 100 |
| 1.5 | M3 | **92C3** | 1.8 | 6 | 6.5 | 3.2 | 3.3 | 3.25 | 4.0 | 12 | 0.07 | 100 |
| | M4 | **92C4** | 1.8 | 6 | 6.5 | 4.3 | 3.3 | 4.00 | 5.0 | 13 | 0.07 | 100 |
| | M5 | **92C5** | 1.8 | 6 | 7.5 | 5.3 | 3.3 | 4.75 | 5.5 | 14 | 0.07 | 100 |
| | M6 | **92C6** | 1.8 | 6 | 9.0 | 6.5 | 3.3 | 6.50 | 6.5 | 16 | 0.08 | 100 |
| 2.5 | M3 | **93C3** | 2.3 | 6 | 7.5 | 3.2 | 4.2 | 3.25 | 4.0 | 12 | 0.12 | 100 |
| | M4 | **93C4** | 2.3 | 6 | 7.5 | 4.3 | 4.2 | 4.00 | 5.0 | 13 | 0.11 | 100 |
| | M5 | **93C5** | 2.3 | 6 | 8.5 | 5.3 | 4.2 | 4.75 | 5.5 | 14 | 0.12 | 100 |
| | M6 | **93C6** | 2.3 | 6 | 9.5 | 6.5 | 4.2 | 6.50 | 6.5 | 16 | 0.10 | 100 |
| 4 | M4 | **94C4** | 3.0 | 8 | 8.5 | 4.3 | 5.0 | 4.75 | 5.5 | 17 | 0.19 | 100 |
| | M5 | **94C5** | 3.0 | 8 | 9.0 | 5.3 | 5.0 | 4.75 | 6.0 | 17 | 0.19 | 100 |
| | M6 | **94C6** | 3.0 | 8 | 10.0 | 6.5 | 5.0 | 6.50 | 6.5 | 19 | 0.21 | 100 |
| | M8 | **94C8** | 3.0 | 8 | 13.0 | 8.5 | 5.0 | 8.50 | 9.5 | 22 | 0.24 | 100 |
| 6 | M4 | **95C4** | 4.0 | 9 | 9.5 | 4.3 | 6.0 | 5.00 | 5.5 | 18 | 0.27 | 100 |
| | M5 | **95C5** | 4.0 | 9 | 9.5 | 5.3 | 6.0 | 6.00 | 6.0 | 19 | 0.32 | 100 |
| | M6 | **95C6** | 4.0 | 9 | 10.0 | 6.5 | 6.0 | 7.00 | 6.5 | 19 | 0.27 | 100 |
| | M8 | **95C8** | 4.0 | 9 | 14.0 | 8.5 | 6.0 | 8.50 | 9.0 | 22 | 0.31 | 100 |
| 10 | M5 | **96C5** | 4.5 | 10 | 12.0 | 5.5 | 7.0 | 6.50 | 7.5 | 22 | 0.45 | 100 |
| | M6 | **96C6** | 4.5 | 10 | 12.0 | 6.5 | 7.0 | 6.50 | 7.5 | 22 | 0.41 | 100 |
| | M8 | **96C8** | 4.5 | 10 | 15.0 | 8.5 | 7.0 | 10.00 | 10.0 | 25 | 0.52 | 100 |
| 16 | M5 | **97C5** | 5.5 | 13 | 12.0 | 5.5 | 8.5 | 5.50 | 6.5 | 26 | 0.81 | 100 |
| | M6 | **97C6** | 5.5 | 13 | 12.0 | 6.5 | 8.5 | 6.25 | 7.5 | 27 | 0.81 | 100 |
| | M8 | **97C8** | 5.5 | 13 | 15.0 | 8.5 | 8.5 | 8.50 | 9.5 | 29 | 0.90 | 100 |

▶ Tool: see chart page 44






## Tubular cable lugs, copper 6 - 400 mm²

standard type

- **For stranded round shaped conductors e.g. VDE 0295 Class 2**
- **For pre-rounded sector shaped conductors**

### Characteristics

- Annealed material optimises material and crimping characteristics

### Material

- Copper to EN 13600

### Surface

- Tin plated

### Order info

- Also available with inspection hole, part number with „ms“

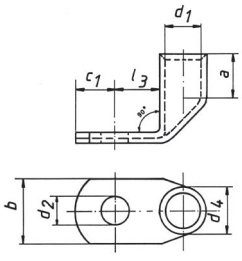
| Cross-section | Size of bolt | | Dimensions mm | | | | | | | | Weight/ 100 pcs. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mm² | Ø | Part No. | d1 | a | b | d2 | d4 | c1 | c2 | l | ~ kg | pcs. |
| 6 | M5 | **1R5** | 3.5 | 9 | 10 | 5.5 | 6.5 | 6.50 | 7.5 | 21 | 0.50 | 100 |
| | M6 | **1R6** | 3.5 | 9 | 12 | 6.5 | 6.5 | 6.50 | 7.5 | 21 | 0.47 | 100 |
| | M8 | **1R8** | 3.5 | 9 | 15 | 8.5 | 6.5 | 10.00 | 10.0 | 23 | 0.54 | 100 |
| | M10 | **1R10** | 3.5 | 9 | 17 | 10.5 | 6.5 | 12.00 | 12.0 | 25 | 0.59 | 100 |
| | M12 | **1R12** | 3.5 | 9 | 19 | 13.0 | 6.5 | 13.00 | 13.0 | 28 | 0.63 | 100 |
| 10 | M5 | **2R5** | 4.5 | 10 | 12 | 5.5 | 7.0 | 6.50 | 7.5 | 22 | 0.50 | 100 |
| | M6 | **2R6** | 4.5 | 10 | 12 | 6.5 | 7.0 | 6.50 | 7.5 | 22 | 0.49 | 100 |
| | M8 | **2R8** | 4.5 | 10 | 15 | 8.5 | 7.0 | 10.00 | 10.0 | 25 | 0.58 | 100 |
| | M10 | **2R10** | 4.5 | 10 | 17 | 10.5 | 7.0 | 12.00 | 12.0 | 27 | 0.62 | 100 |
| | M12 | **2R12** | 4.5 | 10 | 19 | 13.0 | 7.0 | 13.00 | 13.0 | 29 | 0.64 | 100 |
| 16 | M5 | **3R5** | 5.5 | 13 | 12 | 5.5 | 8.5 | 5.50 | 6.5 | 26 | 0.84 | 100 |
| | M6 | **3R6** | 5.5 | 13 | 12 | 6.5 | 8.5 | 6.25 | 7.5 | 27 | 0.86 | 100 |
| | M8 | **3R8** | 5.5 | 13 | 15 | 8.5 | 8.5 | 8.50 | 9.5 | 29 | 0.93 | 100 |
| | M10 | **3R10** | 5.5 | 13 | 17 | 10.5 | 8.5 | 10.50 | 11.5 | 31 | 0.99 | 100 |
| | M12 | **3R12** | 5.5 | 13 | 19 | 13.0 | 8.5 | 12.00 | 13.0 | 33 | 1.02 | 100 |
| 25 | M5 | **4R5** | 7.0 | 15 | 14 | 5.5 | 10.0 | 7.50 | 7.5 | 30 | 1.22 | 25 |
| | M6 | **4R6** | 7.0 | 15 | 14 | 6.5 | 10.0 | 7.50 | 7.5 | 30 | 1.20 | 100 |
| | M8 | **4R8** | 7.0 | 15 | 16 | 8.5 | 10.0 | 10.00 | 10.0 | 32 | 1.31 | 100 |
| | M10 | **4R10** | 7.0 | 15 | 18 | 10.5 | 10.0 | 12.00 | 12.0 | 34 | 1.57 | 100 |
| | M12 | **4R12** | 7.0 | 15 | 19 | 13.0 | 10.0 | 13.00 | 13.0 | 35 | 1.39 | 25 |
| | M14 | **4R14** | 7.0 | 15 | 21 | 15.0 | 10.0 | 14.50 | 14.5 | 38 | 1.49 | 25 |
| 35 | M6 | **5R6** | 8.5 | 17 | 17 | 6.5 | 12.0 | 7.50 | 7.5 | 32 | 1.85 | 100 |
| | M8 | **5R8** | 8.5 | 17 | 17 | 8.5 | 12.0 | 10.00 | 10.0 | 34 | 2.00 | 100 |
| | M10 | **5R10** | 8.5 | 17 | 19 | 10.5 | 12.0 | 12.00 | 12.0 | 37 | 2.13 | 100 |
| | M12 | **5R12** | 8.5 | 17 | 21 | 13.0 | 12.0 | 13.00 | 13.0 | 38 | 2.12 | 100 |
| | M14 | **5R14** | 8.5 | 17 | 21 | 15.0 | 12.0 | 14.50 | 14.5 | 40 | 2.18 | 25 |
| | M16 | **5R16** | 8.5 | 17 | 26 | 17.0 | 12.0 | 16.00 | 16.0 | 42 | 2.24 | 25 |
| 50 | M6 | **6R6** | 10.0 | 19 | 20 | 6.5 | 14.0 | 10.00 | 10.0 | 37 | 3.00 | 25 |
| | M8 | **6R8** | 10.0 | 19 | 20 | 8.5 | 14.0 | 10.00 | 10.0 | 37 | 2.93 | 50 |
| | M10 | **6R10** | 10.0 | 19 | 20 | 10.5 | 14.0 | 12.00 | 12.0 | 39 | 3.08 | 50 |
| | M12 | **6R12** | 10.0 | 19 | 23 | 13.0 | 14.0 | 13.00 | 13.0 | 43 | 3.23 | 50 |
| | M14 | **6R14** | 10.0 | 19 | 23 | 15.0 | 14.0 | 14.50 | 14.5 | 45 | 3.32 | 25 |
| | M16 | **6R16** | 10.0 | 19 | 28 | 17.0 | 14.0 | 16.00 | 16.0 | 46 | 3.38 | 25 |
| | M20 | **6R20** | 10.0 | 19 | 30 | 21.0 | 14.0 | 19.00 | 19.0 | 48 | 3.46 | 25 |

## Tubular cable lugs, copper 6 - 400 mm²

standard type

| Cross-section | Size of bolt | | Dimensions mm | | | | | | | | Weight/ 100 pcs. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mm² | Ø | Part No. | d1 | a | b | d2 | d4 | c1 | c2 | l | ~ kg | pcs. |
| 70 | M6 | **7R6** | 12.0 | 21 | 23 | 6.5 | 16.5 | 10.00 | 10.0 | 43 | 4.49 | 25 |
| | M8 | **7R8** | 12.0 | 21 | 23 | 8.5 | 16.5 | 10.00 | 10.0 | 43 | 4.38 | 50 |
| | M10 | **7R10** | 12.0 | 21 | 23 | 10.5 | 16.5 | 12.00 | 12.0 | 44 | 4.54 | 50 |
| | M12 | **7R12** | 12.0 | 21 | 23 | 13.0 | 16.5 | 13.00 | 13.0 | 46 | 4.63 | 50 |
| | M14 | **7R14** | 12.0 | 21 | 23 | 15.0 | 16.5 | 14.50 | 14.5 | 48 | 4.76 | 25 |
| | M16 | **7R16** | 12.0 | 21 | 28 | 17.0 | 16.5 | 16.00 | 16.0 | 50 | 4.24 | 25 |
| | M20 | **7R20** | 12.0 | 21 | 30 | 21.0 | 16.5 | 19.00 | 19.0 | 53 | 5.09 | 25 |
| 95 | M8 | **8R8** | 13.5 | 25 | 26 | 8.5 | 18.0 | 12.0 | 12.0 | 48 | 5.44 | 25 |
| | M10 | **8R10** | 13.5 | 25 | 26 | 10.5 | 18.0 | 12.0 | 12.0 | 48 | 5.40 | 50 |
| | M12 | **8R12** | 13.5 | 25 | 26 | 13.0 | 18.0 | 13.0 | 13.0 | 49 | 5.56 | 50 |
| | M14 | **8R14** | 13.5 | 25 | 26 | 15.0 | 18.0 | 14.5 | 14.5 | 51 | 5.62 | 25 |
| | M16 | **8R16** | 13.5 | 25 | 28 | 17.0 | 18.0 | 16.0 | 16.0 | 54 | 5.82 | 50 |
| | M20 | **8R20** | 13.5 | 25 | 36 | 21.0 | 18.0 | 22.0 | 22.0 | 60 | 6.71 | 25 |
| 120 | M8 | **9R8** | 15.0 | 26 | 28 | 8.5 | 19.5 | 14.0 | 14.0 | 51 | 6.72 | 25 |
| | M10 | **9R10** | 15.0 | 26 | 28 | 10.5 | 19.5 | 14.0 | 14.0 | 51 | 6.57 | 50 |
| | M12 | **9R12** | 15.0 | 26 | 28 | 13.0 | 19.5 | 14.0 | 14.0 | 51 | 6.38 | 50 |
| | M14 | **9R14** | 15.0 | 26 | 28 | 15.0 | 19.5 | 15.0 | 15.0 | 52 | 6.45 | 25 |
| | M16 | **9R16** | 15.0 | 26 | 30 | 17.0 | 19.5 | 16.0 | 16.0 | 54 | 6.51 | 50 |
| | M20 | **9R20** | 15.0 | 26 | 36 | 21.0 | 19.5 | 22.0 | 22.0 | 63 | 7.74 | 25 |
| 150 | M8 | **10R8** | 16.5 | 30 | 31 | 8.5 | 21.0 | 14.0 | 14.0 | 56 | 7.78 | 10 |
| | M10 | **10R10** | 16.5 | 30 | 31 | 10.5 | 21.0 | 14.0 | 14.0 | 56 | 7.62 | 10 |
| | M12 | **10R12** | 16.5 | 30 | 31 | 13.0 | 21.0 | 15.0 | 15.0 | 57 | 7.73 | 25 |
| | M14 | **10R14** | 16.5 | 30 | 31 | 15.0 | 21.0 | 15.0 | 15.0 | 57 | 7.64 | 10 |
| | M16 | **10R16** | 16.5 | 30 | 31 | 17.0 | 21.0 | 16.0 | 16.0 | 58 | 7.53 | 10 |
| | M20 | **10R20** | 16.5 | 30 | 36 | 21.0 | 21.0 | 22.0 | 22.0 | 66 | 8.80 | 10 |
| 185 | M10 | **11R10** | 19.0 | 30 | 35 | 10.5 | 24.0 | 18.0 | 18.0 | 65 | 11.75 | 10 |
| | M12 | **11R12** | 19.0 | 30 | 35 | 13.0 | 24.0 | 18.0 | 18.0 | 65 | 11.82 | 10 |
| | M14 | **11R14** | 19.0 | 30 | 35 | 15.0 | 24.0 | 18.0 | 18.0 | 65 | 11.39 | 10 |
| | M16 | **11R16** | 19.0 | 30 | 35 | 17.0 | 24.0 | 18.0 | 18.0 | 65 | 11.24 | 25 |
| | M20 | **11R20** | 19.0 | 30 | 39 | 21.0 | 24.0 | 22.0 | 22.0 | 69 | 12.00 | 10 |
| 240 | M10 | **12R10** | 21.0 | 35 | 39 | 10.5 | 26.0 | 21.5 | 19.0 | 72 | 14.72 | 10 |
| | M12 | **12R12** | 21.0 | 35 | 39 | 13.0 | 26.0 | 21.5 | 19.0 | 72 | 14.55 | 10 |
| | M14 | **12R14** | 21.0 | 35 | 39 | 15.0 | 26.0 | 21.5 | 19.0 | 72 | 14.24 | 10 |
| | M16 | **12R16** | 21.0 | 35 | 39 | 17.0 | 26.0 | 21.5 | 19.0 | 72 | 14.09 | 25 |
| | M20 | **12R20** | 21.0 | 35 | 39 | 21.0 | 26.0 | 21.5 | 19.0 | 72 | 13.60 | 10 |
| 300 | M12 | **13R12** | 23.5 | 44 | 43 | 13.0 | 29.5 | 24.0 | 24.0 | 87 | 23.33 | 5 |
| | M14 | **13R14** | 23.5 | 44 | 43 | 15.0 | 29.5 | 24.0 | 24.0 | 87 | 23.14 | 5 |
| | M16 | **13R16** | 23.5 | 44 | 43 | 17.0 | 29.5 | 24.0 | 24.0 | 87 | 22.74 | 5 |
| | M20 | **13R20** | 23.5 | 44 | 43 | 21.0 | 29.5 | 24.0 | 24.0 | 87 | 22.19 | 5 |
| 400 | M12 | **14R12** | 27.0 | 44 | 49 | 13.0 | 34.0 | 24.0 | 24.0 | 90 | 32.41 | 5 |
| | M14 | **14R14** | 27.0 | 44 | 49 | 15.0 | 34.0 | 24.0 | 24.0 | 90 | 32.24 | 5 |
| | M16 | **14R16** | 27.0 | 44 | 49 | 17.0 | 34.0 | 24.0 | 24.0 | 90 | 31.98 | 5 |
| | M20 | **14R20** | 27.0 | 44 | 49 | 21.0 | 34.0 | 24.0 | 24.0 | 90 | 31.41 | 5 |

▶ Tool: see chart page 44




## Angle tubular cable lugs, copper, 6 - 400 mm² 90° angle

standard type

- **For stranded round shaped conductors e.g. VDE 0295 Class 2**
- **For pre-rounded sector shaped conductors**

### Characteristics

- Annealed material optimises material and crimping characteristics
- Flat contact surface by special manufacturing processes

### Material

- Copper to EN 13600

### Surface

- Tin plated

### Order info

- Also available with inspection hole, part number with „ms“

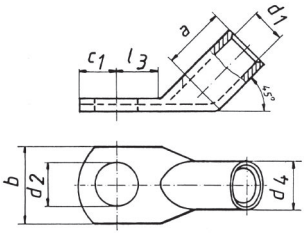
| Cross-section mm² | Size of bolt Ø | Part No. | Dimensions mm | | | | | | | Weight/ 100 pcs. ~ kg | pcs. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | d1 | a | b | d2 | d4 | c1 | l3 | | |
| 6 | M5 | **41R5** | 3.5 | 9 | 10 | 5.5 | 6.5 | 7.5 | 9 | 0.59 | 50 |
| | M6 | **41R6** | 3.5 | 9 | 12 | 6.5 | 6.5 | 7.5 | 10 | 0.58 | 50 |
| | M8 | **41R8** | 3.5 | 9 | 14 | 8.5 | 6.5 | 10.0 | 13 | 0.61 | 50 |
| | M10 | **41R10** | 3.5 | 9 | 17 | 10.5 | 6.5 | 12.0 | 15 | 0.65 | 50 |
| | M12 | **41R12** | 3.5 | 9 | 19 | 13.0 | 6.5 | 13.0 | 17 | 0.62 | 50 |
| 10 | M5 | **42R5** | 4.5 | 10 | 12 | 5.5 | 7.0 | 6.5 | 10 | 0.57 | 50 |
| | M6 | **42R6** | 4.5 | 10 | 12 | 6.5 | 7.0 | 6.5 | 10 | 0.57 | 50 |
| | M8 | **42R8** | 4.5 | 10 | 15 | 8.5 | 7.0 | 10.0 | 13 | 0.63 | 50 |
| | M10 | **42R10** | 4.5 | 10 | 17 | 10.5 | 7.0 | 12.0 | 15 | 0.66 | 50 |
| | M12 | **42R12** | 4.5 | 10 | 19 | 13.0 | 7.0 | 13.0 | 18 | 0.81 | 50 |
| 16 | M5 | **43R5** | 5.5 | 13 | 12 | 5.5 | 8.5 | 7.5 | 10 | 1.01 | 50 |
| | M6 | **43R6** | 5.5 | 13 | 12 | 6.5 | 8.5 | 7.5 | 11 | 1.01 | 50 |
| | M8 | **43R8** | 5.5 | 13 | 15 | 8.5 | 8.5 | 10.0 | 13 | 1.08 | 50 |
| | M10 | **43R10** | 5.5 | 13 | 17 | 10.5 | 8.5 | 12.0 | 15 | 1.09 | 50 |
| | M12 | **43R12** | 5.5 | 13 | 19 | 13.0 | 8.5 | 13.0 | 18 | 1.15 | 50 |
| 25 | M5 | **44R5** | 7.0 | 15 | 14 | 5.5 | 10.0 | 7.5 | 11 | 1.40 | 25 |
| | M6 | **44R6** | 7.0 | 15 | 14 | 6.5 | 10.0 | 7.5 | 11 | 1.32 | 25 |
| | M8 | **44R8** | 7.0 | 15 | 16 | 8.5 | 10.0 | 10.0 | 13 | 1.44 | 25 |
| | M10 | **44R10** | 7.0 | 15 | 18 | 10.5 | 10.0 | 12.0 | 15 | 1.49 | 25 |
| | M12 | **44R12** | 7.0 | 15 | 19 | 13.0 | 10.0 | 13.0 | 18 | 1.44 | 25 |
| | M14 | **44R14** | 7.0 | 15 | 21 | 15.0 | 10.0 | 14.5 | 20 | 1.55 | 25 |
| 35 | M6 | **45R6** | 8.5 | 17 | 17 | 6.5 | 12.0 | 7.5 | 11 | 2.05 | 25 |
| | M8 | **45R8** | 8.5 | 17 | 17 | 8.5 | 12.0 | 10.0 | 13 | 2.20 | 25 |
| | M10 | **45R10** | 8.5 | 17 | 19 | 10.5 | 12.0 | 12.0 | 15 | 2.28 | 25 |
| | M12 | **45R12** | 8.5 | 17 | 21 | 13.0 | 12.0 | 13.0 | 18 | 2.38 | 25 |
| | M14 | **45R14** | 8.5 | 17 | 21 | 15.0 | 12.0 | 14.5 | 20 | 2.41 | 25 |
| | M16 | **45R16** | 8.5 | 17 | 26 | 17.0 | 12.0 | 16.0 | 22 | 2.40 | 25 |
| 50 | M6 | **46R6** | 10.0 | 19 | 20 | 6.5 | 14.0 | 10.0 | 13 | 3.34 | 25 |
| | M8 | **46R8** | 10.0 | 19 | 20 | 8.5 | 14.0 | 10.0 | 13 | 3.28 | 25 |
| | M10 | **46R10** | 10.0 | 19 | 20 | 10.5 | 14.0 | 12.0 | 16 | 3.47 | 25 |
| | M12 | **46R12** | 10.0 | 19 | 23 | 13.0 | 14.0 | 13.0 | 18 | 3.42 | 25 |
| | M14 | **46R14** | 10.0 | 19 | 23 | 15.0 | 14.0 | 14.5 | 20 | 3.55 | 25 |
| | M16 | **46R16** | 10.0 | 19 | 28 | 17.0 | 14.0 | 16.0 | 22 | 3.58 | 25 |
| | M20 | **46R20** | 10.0 | 19 | 30 | 21.0 | 14.0 | 19.0 | 24 | 3.15 | 25 |

## Angle tubular cable lugs, copper, 6 - 400 mm² 90° angle

standard type

| Cross-section mm² | Size of bolt Ø | Part No. | Dimensions mm d1 | a | b | d2 | d4 | c1 | l3 | Weight/ 100 pcs. ~ kg | pcs. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 70 | M6 | **47R6** | 12.0 | 21 | 23 | 6.5 | 16.5 | 10.0 | 13 | 4.90 | 25 |
| | M8 | **47R8** | 12.0 | 21 | 23 | 8.5 | 16.5 | 10.0 | 14 | 4.80 | 25 |
| | M10 | **47R10** | 12.0 | 21 | 23 | 10.5 | 16.5 | 12.0 | 16 | 4.88 | 25 |
| | M12 | **47R12** | 12.0 | 21 | 23 | 13.0 | 16.5 | 13.0 | 18 | 4.99 | 25 |
| | M14 | **47R14** | 12.0 | 21 | 23 | 15.0 | 16.5 | 14.5 | 20 | 5.38 | 25 |
| | M16 | **47R16** | 12.0 | 21 | 28 | 17.0 | 16.5 | 16.0 | 22 | 5.35 | 25 |
| | M20 | **47R20** | 12.0 | 21 | 30 | 21.0 | 16.5 | 19.0 | 24 | 5.30 | 25 |
| 95 | M8 | **48R8** | 13.5 | 25 | 26 | 8.5 | 18.0 | 12.0 | 14 | 5.89 | 25 |
| | M10 | **48R10** | 13.5 | 25 | 26 | 10.5 | 18.0 | 12.0 | 17 | 5.88 | 25 |
| | M12 | **48R12** | 13.5 | 25 | 26 | 13.0 | 18.0 | 13.0 | 18 | 5.93 | 25 |
| | M14 | **48R14** | 13.5 | 25 | 26 | 15.0 | 18.0 | 14.5 | 20 | 6.03 | 25 |
| | M16 | **48R16** | 13.5 | 25 | 28 | 17.0 | 18.0 | 16.0 | 22 | 6.17 | 25 |
| | M20 | **48R20** | 13.5 | 25 | 36 | 21.0 | 18.0 | 22.0 | 24 | 6.42 | 25 |
| 120 | M8 | **49R8** | 15.0 | 26 | 28 | 8.5 | 19.5 | 14.0 | 16 | 7.26 | 10 |
| | M10 | **49R10** | 15.0 | 26 | 28 | 10.5 | 19.5 | 14.0 | 17 | 7.30 | 10 |
| | M12 | **49R12** | 15.0 | 26 | 28 | 13.0 | 19.5 | 14.0 | 18 | 7.19 | 10 |
| | M14 | **49R14** | 15.0 | 26 | 28 | 15.0 | 19.5 | 15.0 | 20 | 7.30 | 10 |
| | M16 | **49R16** | 15.0 | 26 | 30 | 17.0 | 19.5 | 16.0 | 22 | 7.35 | 10 |
| | M20 | **49R20** | 15.0 | 26 | 36 | 21.0 | 19.5 | 22.0 | 24 | 7.60 | 10 |
| 150 | M8 | **50R8** | 16.5 | 30 | 31 | 8.5 | 21.0 | 14.0 | 16 | 8.41 | 10 |
| | M10 | **50R10** | 16.5 | 30 | 31 | 10.5 | 21.0 | 14.0 | 17 | 8.27 | 10 |
| | M12 | **50R12** | 16.5 | 30 | 31 | 13.0 | 21.0 | 15.0 | 18 | 8.34 | 10 |
| | M14 | **50R14** | 16.5 | 30 | 31 | 15.0 | 21.0 | 15.0 | 20 | 8.52 | 10 |
| | M16 | **50R16** | 16.5 | 30 | 31 | 17.0 | 21.0 | 16.0 | 22 | 8.62 | 10 |
| | M20 | **50R20** | 16.5 | 30 | 36 | 21.0 | 21.0 | 22.0 | 24 | 9.10 | 10 |
| 185 | M10 | **51R10** | 19.0 | 30 | 35 | 10.5 | 24.0 | 18.0 | 22 | 12.17 | 10 |
| | M12 | **51R12** | 19.0 | 30 | 35 | 13.0 | 24.0 | 18.0 | 22 | 11.97 | 10 |
| | M14 | **51R14** | 19.0 | 30 | 35 | 15.0 | 24.0 | 18.0 | 22 | 11.77 | 10 |
| | M16 | **51R16** | 19.0 | 30 | 35 | 17.0 | 24.0 | 18.0 | 22 | 11.53 | 10 |
| | M20 | **51R20** | 19.0 | 30 | 39 | 21.0 | 24.0 | 22.0 | 24 | 12.00 | 10 |
| 240 | M10 | **52R10** | 21.0 | 35 | 39 | 10.5 | 26.0 | 21.5 | 22 | 15.60 | 10 |
| | M12 | **52R12** | 21.0 | 35 | 39 | 13.0 | 26.0 | 21.5 | 22 | 15.60 | 10 |
| | M14 | **52R14** | 21.0 | 35 | 39 | 15.0 | 26.0 | 21.5 | 22 | 15.41 | 10 |
| | M16 | **52R16** | 21.0 | 35 | 39 | 17.0 | 26.0 | 21.5 | 22 | 15.18 | 10 |
| | M20 | **52R20** | 21.0 | 35 | 39 | 21.0 | 26.0 | 21.5 | 24 | 14.80 | 10 |
| 300 | M12 | **53R12** | 23.5 | 44 | 43 | 13.0 | 29.5 | 24.0 | 24 | 23.60 | 5 |
| | M14 | **53R14** | 23.5 | 44 | 43 | 15.0 | 29.5 | 24.0 | 24 | 23.40 | 5 |
| | M16 | **53R16** | 23.5 | 44 | 43 | 17.0 | 29.5 | 24.0 | 24 | 20.99 | 5 |
| | M20 | **53R20** | 23.5 | 44 | 43 | 21.0 | 29.5 | 24.0 | 24 | 22.70 | 5 |
| 400 | M12 | **54R12** | 27.0 | 44 | 49 | 13.0 | 34.0 | 24.0 | 24 | 32.53 | 5 |
| | M14 | **54R14** | 27.0 | 44 | 49 | 15.0 | 34.0 | 24.0 | 24 | 33.40 | 5 |
| | M16 | **54R16** | 27.0 | 44 | 49 | 17.0 | 34.0 | 24.0 | 24 | 32.60 | 5 |
| | M20 | **54R20** | 27.0 | 44 | 49 | 21.0 | 34.0 | 24.0 | 24 | 31.80 | 5 |

▶ Tool: see chart page 44




## Angle tubular cable lugs, copper, 6 - 400 mm² 45° angle

standard type

- **For stranded round shaped conductors e.g. VDE 0295 Class 2**
- **For pre-rounded sector shaped conductors**

### Characteristics

- Annealed material optimises material and crimping characteristics
- Flat contact surface by special manufacturing processes

### Material

- Copper to EN 13600

### Surface

- Tin plated

### Order info

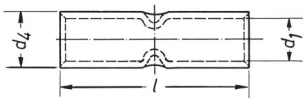
- Also available with inspection hole, part number with „ms“

| Cross-section mm² | Size of bolt Ø | Part No. | Dimensions mm d1 | a | b | d2 | d4 | c1 | l3 | Weight/ 100 pcs. ~ kg | pcs. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | M5 | **41R545** | 3.5 | 9 | 10 | 5.5 | 6.5 | 7.5 | 9 | 0.60 | 50 |
| | M6 | **41R645** | 3.5 | 9 | 12 | 6.5 | 6.5 | 7.5 | 10 | 0.58 | 50 |
| | M8 | **41R845** | 3.5 | 9 | 14 | 8.5 | 6.5 | 10.0 | 13 | 0.68 | 50 |
| | M10 | **41R1045** | 3.5 | 9 | 17 | 10.5 | 6.5 | 12.0 | 15 | 0.70 | 50 |
| | M12 | **41R1245** | 3.5 | 9 | 19 | 13.0 | 6.5 | 13.0 | 17 | 0.70 | 50 |
| 10 | M5 | **42R545** | 4.5 | 10 | 12 | 5.5 | 7.0 | 6.5 | 10 | 0.57 | 50 |
| | M6 | **42R645** | 4.5 | 10 | 12 | 6.5 | 7.0 | 6.5 | 10 | 0.57 | 50 |
| | M8 | **42R845** | 4.5 | 10 | 15 | 8.5 | 7.0 | 10.0 | 13 | 0.63 | 50 |
| | M10 | **42R1045** | 4.5 | 10 | 17 | 10.5 | 7.0 | 12.0 | 15 | 0.68 | 50 |
| | M12 | **42R1245** | 4.5 | 10 | 19 | 13.0 | 7.0 | 13.0 | 18 | 0.68 | 50 |
| 16 | M5 | **43R545** | 5.5 | 13 | 12 | 5.5 | 8.5 | 7.5 | 10 | 1.01 | 50 |
| | M6 | **43R645** | 5.5 | 13 | 12 | 6.5 | 8.5 | 7.5 | 11 | 1.06 | 50 |
| | M8 | **43R845** | 5.5 | 13 | 15 | 8.5 | 8.5 | 10.0 | 13 | 1.15 | 50 |
| | M10 | **43R1045** | 5.5 | 13 | 17 | 10.5 | 8.5 | 12.0 | 15 | 1.09 | 50 |
| | M12 | **43R1245** | 5.5 | 13 | 19 | 13.0 | 8.5 | 13.0 | 18 | 1.15 | 50 |
| 25 | M5 | **44R545** | 7.0 | 15 | 14 | 5.5 | 10.0 | 7.5 | 11 | 1.40 | 25 |
| | M6 | **44R645** | 7.0 | 15 | 14 | 6.5 | 10.0 | 7.5 | 11 | 1.32 | 25 |
| | M8 | **44R845** | 7.0 | 15 | 16 | 8.5 | 10.0 | 10.0 | 13 | 1.44 | 25 |
| | M10 | **44R1045** | 7.0 | 15 | 18 | 10.5 | 10.0 | 12.0 | 15 | 1.49 | 25 |
| | M12 | **44R1245** | 7.0 | 15 | 19 | 13.0 | 10.0 | 13.0 | 18 | 1.44 | 25 |
| | M14 | **44R1445** | 7.0 | 15 | 21 | 15.0 | 10.0 | 14.5 | 20 | 1.55 | 25 |
| 35 | M6 | **45R645** | 8.5 | 17 | 17 | 6.5 | 12.0 | 7.5 | 11 | 2.05 | 25 |
| | M8 | **45R845** | 8.5 | 17 | 17 | 8.5 | 12.0 | 10.0 | 13 | 2.20 | 25 |
| | M10 | **45R1045** | 8.5 | 17 | 19 | 10.5 | 12.0 | 12.0 | 15 | 2.28 | 25 |
| | M12 | **45R1245** | 8.5 | 17 | 21 | 13.0 | 12.0 | 13.0 | 18 | 2.38 | 25 |
| | M14 | **45R1445** | 8.5 | 17 | 21 | 15.0 | 12.0 | 14.5 | 20 | 2.41 | 25 |
| | M16 | **45R1645** | 8.5 | 17 | 26 | 17.0 | 12.0 | 16.0 | 22 | 2.40 | 25 |
| 50 | M6 | **46R645** | 10.0 | 19 | 20 | 6.5 | 14.0 | 10.0 | 13 | 3.43 | 25 |
| | M8 | **46R845** | 10.0 | 19 | 20 | 8.5 | 14.0 | 10.0 | 13 | 3.28 | 25 |
| | M10 | **46R1045** | 10.0 | 19 | 20 | 10.5 | 14.0 | 12.0 | 16 | 3.47 | 25 |
| | M12 | **46R1245** | 10.0 | 19 | 23 | 13.0 | 14.0 | 13.0 | 18 | 3.42 | 25 |
| | M14 | **46R1445** | 10.0 | 19 | 23 | 15.0 | 14.0 | 14.5 | 20 | 3.65 | 25 |
| | M16 | **46R1645** | 10.0 | 19 | 28 | 17.0 | 14.0 | 16.0 | 22 | 3.76 | 25 |
| | M20 | **46R2045** | 10.0 | 19 | 30 | 21.0 | 14.0 | 19.0 | 24 | 3.30 | 25 |

## Angle tubular cable lugs, copper, 6 - 400 mm²
## 45° angle
standard type

| Cross-section mm² | Size of bolt Ø | Part No. | Dimensions mm d1 | a | b | d2 | d4 | c1 | l3 | Weight/ 100 pcs. ~ kg | pcs. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 70 | M6 | **47R645** | 12.0 | 21 | 23 | 6.5 | 16.5 | 10.0 | 13 | 5.06 | 25 |
| | M8 | **47R845** | 12.0 | 21 | 23 | 8.5 | 16.5 | 10.0 | 14 | 5.06 | 25 |
| | M10 | **47R1045** | 12.0 | 21 | 23 | 10.5 | 16.5 | 12.0 | 16 | 5.25 | 25 |
| | M12 | **47R1245** | 12.0 | 21 | 23 | 13.0 | 16.5 | 13.0 | 18 | 5.30 | 25 |
| | M14 | **47R1445** | 12.0 | 21 | 23 | 15.0 | 16.5 | 14.5 | 20 | 5.60 | 25 |
| | M16 | **47R1645** | 12.0 | 21 | 28 | 17.0 | 16.5 | 16.0 | 22 | 5.61 | 25 |
| | M20 | **47R2045** | 12.0 | 21 | 30 | 21.0 | 16.5 | 19.0 | 24 | 5.60 | 25 |
| 95 | M8 | **48R845** | 13.5 | 25 | 26 | 8.5 | 18.0 | 12.0 | 14 | 6.19 | 25 |
| | M10 | **48R1045** | 13.5 | 25 | 26 | 10.5 | 18.0 | 12.0 | 17 | 5.70 | 25 |
| | M12 | **48R1245** | 13.5 | 25 | 26 | 13.0 | 18.0 | 13.0 | 18 | 6.67 | 25 |
| | M14 | **48R1445** | 13.5 | 25 | 26 | 15.0 | 18.0 | 14.5 | 20 | 6.60 | 25 |
| | M16 | **48R1645** | 13.5 | 25 | 28 | 17.0 | 18.0 | 16.0 | 22 | 6.78 | 25 |
| | M20 | **48R2045** | 13.5 | 25 | 36 | 21.0 | 18.0 | 22.0 | 24 | 6.80 | 25 |
| 120 | M8 | **49R845** | 15.0 | 26 | 28 | 8.5 | 19.5 | 14.0 | 16 | 7.92 | 10 |
| | M10 | **49R1045** | 15.0 | 26 | 28 | 10.5 | 19.5 | 14.0 | 17 | 7.99 | 10 |
| | M12 | **49R1245** | 15.0 | 26 | 28 | 13.0 | 19.5 | 14.0 | 18 | 7.96 | 10 |
| | M14 | **49R1445** | 15.0 | 26 | 28 | 15.0 | 19.5 | 15.0 | 20 | 7.94 | 10 |
| | M16 | **49R1645** | 15.0 | 26 | 30 | 17.0 | 19.5 | 16.0 | 22 | 8.26 | 10 |
| | M20 | **49R2045** | 15.0 | 26 | 36 | 21.0 | 19.5 | 22.0 | 24 | 8.20 | 10 |
| 150 | M8 | **50R845** | 16.5 | 30 | 31 | 8.5 | 21.0 | 14.0 | 16 | 9.00 | 10 |
| | M10 | **50R1045** | 16.5 | 30 | 31 | 10.5 | 21.0 | 14.0 | 17 | 9.15 | 10 |
| | M12 | **50R1245** | 16.5 | 30 | 31 | 13.0 | 21.0 | 15.0 | 18 | 8.75 | 10 |
| | M14 | **50R1445** | 16.5 | 30 | 31 | 15.0 | 21.0 | 15.0 | 20 | 9.20 | 10 |
| | M16 | **50R1645** | 16.5 | 30 | 31 | 17.0 | 21.0 | 16.0 | 22 | 9.22 | 10 |
| | M20 | **50R2045** | 16.5 | 30 | 36 | 21.0 | 21.0 | 22.0 | 24 | 9.26 | 10 |
| 185 | M10 | **51R1045** | 19.0 | 30 | 35 | 10.5 | 24.0 | 18.0 | 22 | 13.30 | 10 |
| | M12 | **51R1245** | 19.0 | 30 | 35 | 13.0 | 24.0 | 18.0 | 22 | 13.32 | 10 |
| | M14 | **51R1445** | 19.0 | 30 | 35 | 15.0 | 24.0 | 18.0 | 22 | 13.40 | 10 |
| | M16 | **51R1645** | 19.0 | 30 | 35 | 17.0 | 24.0 | 18.0 | 22 | 12.80 | 10 |
| | M20 | **51R2045** | 19.0 | 30 | 39 | 21.0 | 24.0 | 22.0 | 24 | 13.10 | 10 |
| 240 | M10 | **52R1045** | 21.0 | 35 | 39 | 10.5 | 26.0 | 21.5 | 22 | 16.28 | 10 |
| | M12 | **52R1245** | 21.0 | 35 | 39 | 13.0 | 26.0 | 21.5 | 22 | 16.80 | 10 |
| | M14 | **52R1445** | 21.0 | 35 | 39 | 15.0 | 26.0 | 21.5 | 22 | 16.40 | 10 |
| | M16 | **52R1645** | 21.0 | 35 | 39 | 17.0 | 26.0 | 21.5 | 22 | 16.10 | 10 |
| | M20 | **52R2045** | 21.0 | 35 | 39 | 21.0 | 26.0 | 21.5 | 24 | 16.10 | 10 |
| 300 | M12 | **53R1245** | 23.5 | 44 | 43 | 13.0 | 29.5 | 24.0 | 24 | 24.08 | 5 |
| | M14 | **53R1445** | 23.5 | 44 | 43 | 15.0 | 29.5 | 24.0 | 24 | 24.20 | 5 |
| | M16 | **53R1645** | 23.5 | 44 | 43 | 17.0 | 29.5 | 24.0 | 24 | 23.23 | 5 |
| | M20 | **53R2045** | 23.5 | 44 | 43 | 21.0 | 29.5 | 24.0 | 24 | 23.50 | 5 |
| 400 | M12 | **54R1245** | 27.0 | 44 | 49 | 13.0 | 34.0 | 24.0 | 24 | 34.00 | 5 |
| | M14 | **54R1445** | 27.0 | 44 | 49 | 15.0 | 34.0 | 24.0 | 24 | 33.40 | 5 |
| | M16 | **54R1645** | 27.0 | 44 | 49 | 17.0 | 34.0 | 24.0 | 24 | 34.28 | 5 |
| | M20 | **54R2045** | 27.0 | 44 | 49 | 21.0 | 34.0 | 24.0 | 24 | 31.80 | 5 |

▶ Tool: see chart page 44




## Butt-connector, copper 0.75 - 400 mm²

standard type

- **With buttmarks for precise cable insertion**
- **For stranded conductors e.g. VDE 0295 Class 2**

### Characteristics

- Annealed material optimises material and crimping characteristics

### Material

- Copper to EN 13600

### Surface

- Tin plated

### Order info

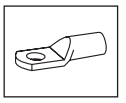
- Also available without wirestop, part number with „om“

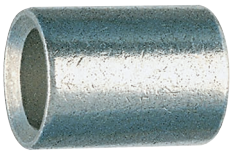
| Cross-section mm² | Part No. | Dimensions mm d1 | d4 | l | Weight/ 100 pcs. ~ kg | pcs. |
|---|---|---|---|---|---|---|
| 0.75 | **17R** | 1.3 | 2.8 | 20 | 0.09 | 100 |
| 1.5 | **18R** | 1.8 | 3.3 | 25 | 0.12 | 100 |
| 2.5 | **19R** | 2.3 | 4.2 | 25 | 0.20 | 100 |
| 4 | **20R** | 3.0 | 5.0 | 25 | 0.26 | 100 |
| 6 | **21R** | 3.5 | 6.5 | 25 | 0.50 | 100 |
| 10 | **22R** | 4.5 | 7.0 | 30 | 0.72 | 100 |
| 16 | **23R** | 5.5 | 8.5 | 35 | 1.00 | 100 |
| 25 | **24R** | 7.0 | 10.0 | 40 | 1.41 | 50 |
| 35 | **25R** | 8.5 | 12.0 | 45 | 2.24 | 50 |
| 50 | **26R** | 10.0 | 14.0 | 50 | 3.36 | 50 |
| 70 | **27R** | 12.0 | 16.5 | 55 | 4.87 | 50 |
| 95 | **28R** | 13.5 | 18.0 | 60 | 5.91 | 25 |
| 120 | **29R** | 15.0 | 19.5 | 65 | 7.00 | 25 |
| 150 | **30R** | 16.5 | 21.0 | 70 | 8.12 | 10 |
| 185 | **31R** | 19.0 | 24.0 | 75 | 10.06 | 10 |
| 240 | **32R** | 21.0 | 26.0 | 85 | 13.82 | 10 |
| 300 | **33R** | 23.5 | 29.5 | 100 | 21.94 | 5 |
| 400 | **34R** | 27.0 | 34.0 | 100 | 29.65 | 5 |

▶ Tool: see chart page 44

# Parallel connector, copper 1.5 - 300 mm²

standard type





## For connecting different cable cross-sections

### Characteristics

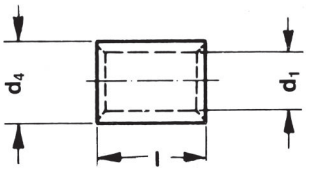
- Annealed material optimises material and crimping characteristics

### Material

- Copper to EN 13600

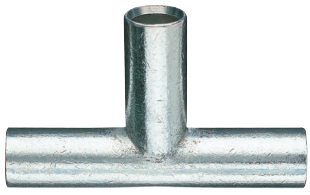
### Surface

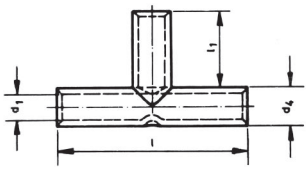
- Tin plated




| Total cross-section mm² | Part No. | Dimensions mm d1 | d4 | l | Weight/ 100 pcs. ~ kg | pcs. |
|---|---|---|---|---|---|---|
| 1.5 | **148R** | 1.8 | 3.3 | 5 | 0.03 | 100 |
| 2.5 | **149R** | 2.3 | 4.2 | 5 | 0.04 | 100 |
| 4 | **150R** | 3.0 | 5.0 | 7 | 0.08 | 100 |
| 6 | **151R** | 4.0 | 6.0 | 7 | 0.09 | 100 |
| 10 | **152R** | 4.5 | 7.0 | 9 | 0.17 | 100 |
| 16 | **153R** | 5.5 | 8.5 | 10 | 0.28 | 100 |
| 25 | **154R** | 7.0 | 10.0 | 13 | 0.44 | 100 |
| 35 | **155R** | 8.5 | 12.0 | 16 | 0.78 | 100 |
| 50 | **156R** | 10.0 | 14.0 | 19 | 1.22 | 100 |
| 70 | **157R** | 12.0 | 16.5 | 19 | 1.62 | 50 |
| 95 | **158R** | 13.5 | 18.0 | 20 | 1.90 | 50 |
| 120 | **159R** | 15.0 | 19.5 | 22 | 2.28 | 50 |
| 150 | **160R** | 16.5 | 21.0 | 26 | 3.00 | 50 |
| 185 | **161R** | 19.0 | 24.0 | 30 | 4.37 | 50 |
| 240 | **162R** | 21.0 | 26.0 | 32 | 5.30 | 25 |
| 300 | **163R** | 23.5 | 29.5 | 36 | 8.05 | 25 |

▶ Tool: see chart page 44






## T-connectors, copper 1.5 - 240 mm²

standard type

- **For single cable tap conductors**
- **For stranded conductors e.g. VDE 0295 Class 2**

### Characteristics

- Annealed material optimises material and crimping characteristics

### Material

- Copper to EN 13600

### Surface

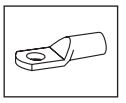
- Tin plated

| Cross-section mm² | Part No. | Dimensions mm d1 | d4 | l | l1 | Weight/ 100 pcs. ~ kg | pcs. |
|---|---|---|---|---|---|---|---|
| 1.5 | **TV15** | 1.8 | 3.3 | 30 | 12 | 0.23 | 50 |
| 2.5 | **TV2.5** | 2.3 | 4.2 | 30 | 12 | 0.37 | 50 |
| 4 | **TV4** | 3.0 | 5.0 | 30 | 12 | 0.45 | 50 |
| 6 | **TV6** | 4.0 | 6.0 | 35 | 14 | 0.73 | 50 |
| 10 | **TV10** | 4.5 | 7.0 | 35 | 14 | 1.05 | 50 |
| 16 | **TV16** | 5.5 | 8.5 | 50 | 21 | 2.20 | 50 |
| 25 | **TV25** | 7.0 | 10.0 | 55 | 23 | 2.90 | 25 |
| 35 | **TV35** | 8.5 | 12.0 | 70 | 30 | 5.20 | 25 |
| 50 | **TV50** | 10.0 | 14.0 | 80 | 34 | 7.90 | 25 |
| 70 | **TV70** | 12.0 | 16.5 | 85 | 35 | 11.20 | 10 |
| 95 | **TV95** | 13.5 | 18.0 | 90 | 36 | 13.00 | 10 |
| 120 | **TV120** | 15.0 | 19.5 | 95 | 38 | 14.70 | 10 |
| 150 | **TV150** | 16.5 | 21.0 | 110 | 44 | 18.90 | 10 |
| 185 | **TV185** | 19.0 | 24.0 | 115 | 45 | 25.00 | 5 |
| 240 | **TV240** | 21.0 | 26.0 | 130 | 52 | 31.10 | 5 |

▶ Tool: see chart page 44

## Cross-connector, copper 1.5 - 240 mm²

standard type



- **For double cable tap conductors**
- **For stranded conductors e.g. VDE 0295 Class 2**

### Characteristics

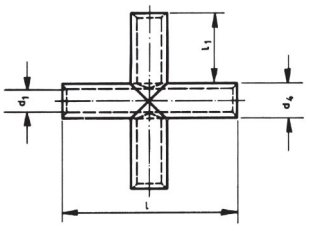
- Annealed material optimises material and crimping characteristics

### Material

- Copper to EN 13600

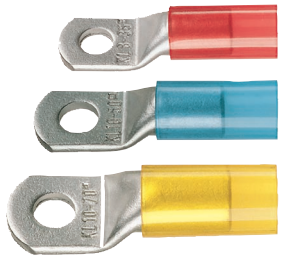
### Surface

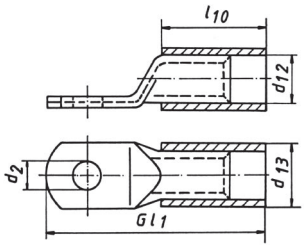
- Tin plated

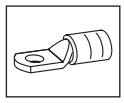



| Cross-section mm² | Part No. | Dimensions mm d1 | d4 | l | l1 | Weight/ 100 pcs. ~ kg | pcs. |
|---|---|---|---|---|---|---|---|
| 1.5 | **KV15** | 1.8 | 3.3 | 30 | 12 | 0.320 | 25 |
| 2.5 | **KV2.5** | 2.3 | 4.2 | 30 | 12 | 0.490 | 25 |
| 4 | **KV4** | 3.0 | 5.0 | 30 | 12 | 0.650 | 25 |
| 6 | **KV6** | 4.0 | 6.0 | 35 | 14 | 0.950 | 25 |
| 10 | **KV10** | 4.5 | 7.0 | 35 | 14 | 1.350 | 25 |
| 16 | **KV16** | 5.5 | 8.5 | 50 | 21 | 2.950 | 25 |
| 25 | **KV25** | 7.0 | 10.0 | 55 | 23 | 4.000 | 15 |
| 35 | **KV35** | 8.5 | 12.0 | 70 | 30 | 6.900 | 15 |
| 50 | **KV50** | 10.0 | 14.0 | 80 | 34 | 10.400 | 15 |
| 70 | **KV70** | 12.0 | 16.5 | 85 | 35 | 14.600 | 15 |
| 95 | **KV95** | 13.5 | 18.0 | 90 | 36 | 17.100 | 15 |
| 120 | **KV120** | 15.0 | 19.5 | 95 | 38 | 19.400 | 5 |
| 150 | **KV150** | 16.5 | 21.0 | 110 | 44 | 24.100 | 5 |
| 185 | **KV185** | 19.0 | 24.0 | 115 | 45 | 32.100 | 5 |
| 240 | **KV240** | 21.0 | 26.0 | 130 | 52 | 41.100 | 5 |

▶ Tool: see chart page 44





## Insulated tubular cable lugs, Cu 10 - 150 mm²

standard type

- **Crimping operation direct on the insulation**
- **For stranded conductors e.g. VDE 0295 Class 2**

### Characteristics

- Annealed material optimises material and crimping characteristics

### Material

- Cable lug: Copper to EN 13600
- Insulation sleeve: PA, free of halide

### Surface

- Tin plated

### Order info

- Also available with inspection hole, part number with „ms“
- Dimensions of tubular cable lugs can be found from page 22

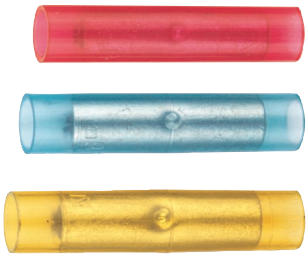
| Cross-section mm² | Size of bolt Ø | Part No. | Colour | Dimensions mm d2 | d12 | d13 | Gl1 | l10 | Weight 100 pcs. ~ kg Cu | Total | pcs. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | M5 | **602R5** | | 5.5 | 7.0 | 9.0 | 35.5 | 17.0 | 0.50 | 0.548 | 25 |
| | M6 | **602R6** | | 6.5 | 7.0 | 9.0 | 35.5 | 17.0 | 0.49 | 0.538 | 25 |
| | M8 | **602R8** | | 8.5 | 7.0 | 9.0 | 42.0 | 17.0 | 0.58 | 0.628 | 25 |
| | M10 | **602R10** | | 10.5 | 7.0 | 9.0 | 46.0 | 17.0 | 0.62 | 0.668 | 25 |
| | M12 | **602R12** | | 13.0 | 7.0 | 9.0 | 49.0 | 17.0 | 0.64 | 0.688 | 25 |
| 16 | M5 | **603R5** | | 5.5 | 8.5 | 10.5 | 39.5 | 21.0 | 0.84 | 0.907 | 25 |
| | M6 | **603R6** | | 6.5 | 8.5 | 10.5 | 41.3 | 21.0 | 0.86 | 0.927 | 25 |
| | M8 | **603R8** | | 8.5 | 8.5 | 10.5 | 45.5 | 21.0 | 0.93 | 0.997 | 25 |
| | M10 | **603R10** | | 10.5 | 8.5 | 10.5 | 49.5 | 21.0 | 0.99 | 1.057 | 25 |
| | M12 | **603R12** | | 13.0 | 8.5 | 10.5 | 54.0 | 21.0 | 1.02 | 1.087 | 25 |
| 25 | M5 | **604R5** | | 5.5 | 10.0 | 12.0 | 45.0 | 24.0 | 1.22 | 1.312 | 25 |
| | M6 | **604R6** | | 6.5 | 10.0 | 12.0 | 46.5 | 24.0 | 1.20 | 1.292 | 25 |
| | M8 | **604R8** | | 8.5 | 10.0 | 12.0 | 51.0 | 24.0 | 1.31 | 1.402 | 25 |
| | M10 | **604R10** | | 10.5 | 10.0 | 12.0 | 55.0 | 24.0 | 1.57 | 1.662 | 25 |
| | M12 | **604R12** | | 13.0 | 10.0 | 12.0 | 57.0 | 24.0 | 1.39 | 1.482 | 25 |
| | M14 | **604R14** | | 15.0 | 10.0 | 12.0 | 61.5 | 24.0 | 1.49 | 1.582 | 25 |
| 35 | M6 | **605R6** | | 6.5 | 12.0 | 14.5 | 49.5 | 27.0 | 1.85 | 2.010 | 25 |
| | M8 | **605R8** | | 8.5 | 12.0 | 14.5 | 54.0 | 27.0 | 2.00 | 2.160 | 25 |
| | M10 | **605R10** | | 10.5 | 12.0 | 14.5 | 59.0 | 27.0 | 2.13 | 2.290 | 25 |
| | M12 | **605R12** | | 13.0 | 12.0 | 14.5 | 61.0 | 27.0 | 2.12 | 2.280 | 25 |
| | M14 | **605R14** | | 15.0 | 12.0 | 14.5 | 64.5 | 27.0 | 2.18 | 2.340 | 25 |
| | M16 | **605R16** | | 17.0 | 12.0 | 14.5 | 68.0 | 27.0 | 2.24 | 2.400 | 25 |
| 50 | M6 | **606R6** | | 6.5 | 14.0 | 16.5 | 59.0 | 32.0 | 3.00 | 3.220 | 25 |
| | M8 | **606R8** | | 8.5 | 14.0 | 16.5 | 59.0 | 32.0 | 2.93 | 3.150 | 25 |
| | M10 | **606R10** | | 10.5 | 14.0 | 16.5 | 63.0 | 32.0 | 3.08 | 3.300 | 25 |
| | M12 | **606R12** | | 13.0 | 14.0 | 16.5 | 68.0 | 32.0 | 3.23 | 3.450 | 25 |
| | M14 | **606R14** | | 15.0 | 14.0 | 16.5 | 71.5 | 32.0 | 3.32 | 3.540 | 25 |
| | M16 | **606R16** | | 17.0 | 14.0 | 16.5 | 77.0 | 32.0 | 3.38 | 3.600 | 25 |
| | M20 | **606R20** | | 21.0 | 14.0 | 16.5 | 83.5 | 32.0 | 3.46 | 3.680 | 25 |

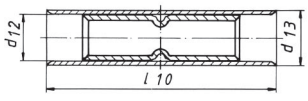
## Insulated tubular cable lugs, Cu 10 - 150 mm²

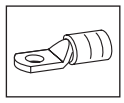
standard type

| Cross-section mm² | Size of bolt Ø | Part No. | Colour | Dimensions mm d2 | d12 | d13 | Gl1 | l10 | Weight 100 pcs. ~ kg Cu | Total | pcs. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 70 | M6 | **607R6** | | 6.5 | 16.4 | 18.9 | 65.5 | 33.5 | 4.49 | 4.760 | 25 |
| | M8 | **607R8** | | 8.5 | 16.4 | 18.9 | 65.5 | 33.5 | 4.38 | 4.650 | 25 |
| | M10 | **607R10** | | 10.5 | 16.4 | 18.9 | 66.5 | 33.5 | 4.54 | 4.810 | 25 |
| | M12 | **607R12** | | 13.0 | 16.4 | 18.9 | 70.5 | 33.5 | 4.63 | 4.900 | 25 |
| | M14 | **607R14** | | 15.0 | 16.4 | 18.9 | 73.5 | 33.5 | 4.76 | 5.030 | 25 |
| | M16 | **607R16** | | 17.0 | 16.4 | 18.9 | 78.5 | 33.5 | 4.24 | 4.510 | 25 |
| | M20 | **607R20** | | 21.0 | 16.4 | 18.9 | 84.5 | 33.5 | 5.09 | 5.360 | 25 |
| 95 | M8 | **608R8** | | 8.5 | 17.8 | 20.8 | 74.0 | 40.0 | 5.44 | 5.85 | 25 |
| | M10 | **608R10** | | 10.5 | 17.8 | 20.8 | 74.0 | 40.0 | 5.40 | 5.81 | 25 |
| | M12 | **608R12** | | 13.0 | 17.8 | 20.8 | 76.0 | 40.0 | 5.56 | 5.97 | 25 |
| | M14 | **608R14** | | 15.0 | 17.8 | 20.8 | 79.5 | 40.0 | 5.62 | 6.03 | 25 |
| | M16 | **608R16** | | 17.0 | 17.8 | 20.8 | 84.0 | 40.0 | 5.82 | 6.23 | 25 |
| | M20 | **608R20** | | 21.0 | 17.8 | 20.8 | 96.0 | 40.0 | 6.71 | 7.12 | 25 |
| 120 | M8 | **609R8** | | 8.5 | 19.3 | 22.3 | 80.5 | 41.5 | 6.72 | 7.18 | 10 |
| | M10 | **609R10** | | 10.5 | 19.3 | 22.3 | 80.5 | 41.5 | 6.57 | 7.03 | 10 |
| | M12 | **609R12** | | 13.0 | 19.3 | 22.3 | 80.5 | 41.5 | 6.38 | 6.84 | 10 |
| | M14 | **609R14** | | 15.0 | 19.3 | 22.3 | 82.5 | 41.5 | 6.45 | 6.91 | 10 |
| | M16 | **609R16** | | 17.0 | 19.3 | 22.3 | 85.5 | 41.5 | 6.51 | 6.97 | 10 |
| | M20 | **609R20** | | 21.0 | 19.3 | 22.3 | 100.5 | 41.5 | 7.74 | 8.20 | 10 |
| 150 | M8 | **610R8** | | 8.5 | 20.8 | 23.8 | 88.0 | 48.0 | 7.78 | 8.36 | 10 |
| | M10 | **610R10** | | 10.5 | 20.8 | 23.8 | 88.0 | 48.0 | 7.62 | 8.20 | 10 |
| | M12 | **610R12** | | 13.0 | 20.8 | 23.8 | 89.0 | 48.0 | 7.73 | 8.31 | 10 |
| | M14 | **610R14** | | 15.0 | 20.8 | 23.8 | 90.0 | 48.0 | 7.64 | 8.22 | 10 |
| | M16 | **610R16** | | 17.0 | 20.8 | 23.8 | 92.0 | 48.0 | 7.53 | 8.11 | 10 |
| | M20 | **610R20** | | 21.0 | 20.8 | 23.8 | 106.0 | 48.0 | 8.80 | 9.38 | 10 |

▶ Tool: see chart page 46





## Insulated butt-connector, Cu 10 - 150 mm²

Standard type

- **Crimping operation direct on the insulation**
- **With buttmarks for precise cable insertion**
- **For stranded conductors e.g. VDE 0295 Class 2**

### Characteristics

- Annealed material optimises material and crimping characteristics

### Material

- Connector: Copper to EN 13600
- Insulation sleeve: PA, free of halide

### Surface

- Tin plated

### Order info

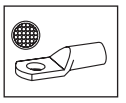
- Dimensions of butt-connectors can be found on page 28

| Cross-section mm² | Part No. | Colour | Dimensions mm d12 | d13 | l10 | Weight 100 pcs. ~ kg Cu | Total | pcs. |
|---|---|---|---|---|---|---|---|---|
| 10 | **622R** | | 7.0 | 9.0 | 42 | 0.72 | 0.84 | 25 |
| 16 | **623R** | | 8.5 | 10.5 | 50 | 1.00 | 1.16 | 25 |
| 25 | **624R** | | 10.0 | 12.0 | 57 | 1.41 | 1.63 | 25 |
| 35 | **625R** | | 12.0 | 14.4 | 65 | 2.24 | 2.60 | 25 |
| 50 | **626R** | | 14.0 | 16.4 | 72 | 3.36 | 3.81 | 25 |
| 70 | **627R** | | 16.4 | 19.0 | 80 | 4.87 | 5.46 | 25 |
| 95 | **628R** | | 17.8 | 20.8 | 87 | 5.91 | 6.74 | 25 |
| 120 | **629R** | | 19.3 | 22.3 | 94 | 7.00 | 7.96 | 10 |
| 150 | **630R** | | 20.8 | 23.8 | 103 | 8.12 | 9.32 | 10 |

▶ Tool: see chart page 46

# Tubular cable lugs, copper 10 - 300 mm²

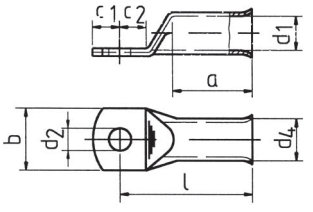
For fine strand conductors, DIN VDE 60228
(e.g. VDE 0295 Class 5 and 6)



## Flared cable entry to ease insertion

### Characteristics

- Annealed material optimises material and crimping characteristics
- Tube dimensions suitable for fine strand conductors




### Material

- Copper to EN 13600

### Surface

- Tin plated

### Order info

- Also available with inspection hole, part number with „ms“

| Cross-section | Size of bolt | | Dimensions mm | | | | | | | | Weight/ 100 pcs. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mm² | Ø | Part No. | d1 | a | b | d2 | d4 | c1 | c2 | l | ~ kg | pcs. |
| 10 | M5 | **702F5** | 5.5 | 14 | 12 | 5.3 | 8.0 | 6.25 | 7.5 | 27 | 0.72 | 100 |
| | M6 | **702F6** | 5.5 | 14 | 12 | 6.5 | 8.0 | 6.25 | 7.5 | 27 | 0.71 | 100 |
| | M8 | **702F8** | 5.5 | 14 | 16 | 8.5 | 8.0 | 8.50 | 9.5 | 29 | 0.77 | 100 |
| | M10 | **702F10** | 5.5 | 14 | 16 | 10.5 | 8.0 | 10.50 | 11.5 | 31 | 0.82 | 100 |
| | M12 | **702F12** | 5.5 | 14 | 19 | 13.0 | 8.0 | 12.00 | 13.0 | 32 | 0.82 | 100 |
| 16 | M5 | **703F5** | 6.6 | 15 | 13 | 5.3 | 9.5 | 6.25 | 7.5 | 30 | 1.10 | 100 |
| | M6 | **703F6** | 6.6 | 15 | 13 | 6.5 | 9.5 | 6.25 | 7.5 | 30 | 1.07 | 100 |
| | M8 | **703F8** | 6.6 | 15 | 16 | 8.5 | 9.5 | 10.00 | 10.0 | 32 | 1.21 | 100 |
| | M10 | **703F10** | 6.6 | 15 | 17 | 10.5 | 9.5 | 12.00 | 12.0 | 34 | 1.28 | 100 |
| | M12 | **703F12** | 6.6 | 15 | 19 | 13.0 | 9.5 | 13.00 | 13.0 | 35 | 1.28 | 100 |
| 25 | M5 | **704F5** | 7.9 | 17 | 15 | 5.3 | 11.0 | 7.50 | 7.5 | 32 | 1.52 | 25 |
| | M6 | **704F6** | 7.9 | 17 | 15 | 6.5 | 11.0 | 7.50 | 7.5 | 32 | 1.50 | 100 |
| | M8 | **704F8** | 7.9 | 17 | 17 | 8.5 | 11.0 | 10.00 | 10.0 | 34 | 1.61 | 100 |
| | M10 | **704F10** | 7.9 | 17 | 17 | 10.5 | 11.0 | 12.00 | 12.0 | 37 | 1.71 | 100 |
| | M12 | **704F12** | 7.9 | 17 | 19 | 13.0 | 11.0 | 13.00 | 13.0 | 38 | 1.74 | 25 |
| 35 | M6 | **705F6** | 9.2 | 19 | 17 | 6.5 | 12.5 | 7.50 | 7.5 | 35 | 1.91 | 100 |
| | M8 | **705F8** | 9.2 | 19 | 18 | 8.5 | 12.5 | 10.00 | 10.0 | 37 | 2.08 | 100 |
| | M10 | **705F10** | 9.2 | 19 | 18 | 10.5 | 12.5 | 12.00 | 12.0 | 40 | 2.24 | 100 |
| | M12 | **705F12** | 9.2 | 19 | 19 | 13.0 | 12.5 | 13.00 | 13.0 | 41 | 2.22 | 25 |
| | M14 | **705F14** | 9.2 | 19 | 21 | 15.0 | 12.5 | 14.50 | 14.5 | 43 | 2.41 | 25 |
| 50 | M6 | **706F6** | 11.0 | 21 | 21 | 6.5 | 15.0 | 10.00 | 10.0 | 41 | 3.54 | 25 |
| | M8 | **706F8** | 11.0 | 21 | 21 | 8.5 | 15.0 | 10.00 | 10.0 | 41 | 3.44 | 50 |
| | M10 | **706F10** | 11.0 | 21 | 21 | 10.5 | 15.0 | 12.00 | 12.0 | 43 | 3.64 | 50 |
| | M12 | **706F12** | 11.0 | 21 | 21 | 13.0 | 15.0 | 13.00 | 13.0 | 46 | 3.73 | 50 |
| | M14 | **706F14** | 11.0 | 21 | 23 | 15.0 | 15.0 | 14.50 | 14.5 | 48 | 3.89 | 25 |
| | M16 | **706F16** | 11.0 | 21 | 28 | 17.0 | 15.0 | 16.00 | 16.0 | 50 | 4.02 | 25 |
| 70 | M8 | **707F8** | 13.0 | 25 | 25 | 8.5 | 17.0 | 10.00 | 10.0 | 46 | 4.46 | 50 |
| | M10 | **707F10** | 13.0 | 25 | 25 | 10.5 | 17.0 | 12.00 | 12.0 | 48 | 4.62 | 50 |
| | M12 | **707F12** | 13.0 | 25 | 25 | 13.0 | 17.0 | 13.00 | 13.0 | 50 | 4.71 | 50 |
| | M14 | **707F14** | 13.0 | 25 | 25 | 15.0 | 17.0 | 14.50 | 14.5 | 52 | 4.87 | 25 |
| | M16 | **707F16** | 13.0 | 25 | 25 | 17.0 | 17.0 | 16.00 | 16.0 | 54 | 5.85 | 25 |
| 95 | M8 | **708F8** | 14.5 | 26 | 28 | 8.5 | 19.0 | 12.00 | 12.0 | 52 | 6.35 | 25 |
| | M10 | **708F10** | 14.5 | 26 | 28 | 10.5 | 19.0 | 12.00 | 12.0 | 52 | 6.23 | 50 |
| | M12 | **708F12** | 14.5 | 26 | 28 | 13.0 | 19.0 | 13.00 | 13.0 | 53 | 6.31 | 50 |
| | M14 | **708F14** | 14.5 | 26 | 28 | 15.0 | 19.0 | 14.50 | 14.5 | 55 | 6.46 | 25 |
| | M16 | **708F16** | 14.5 | 26 | 28 | 17.0 | 19.0 | 16.00 | 16.0 | 56 | 6.56 | 50 |

## Tubular cable lugs, copper 10 - 300 mm²

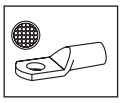
For fine strand conductors, DIN VDE 60228
(e.g. VDE 0295 Class 5 and 6)

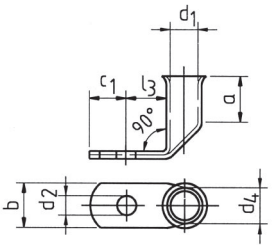
| Cross-section | Size of bolt | | Dimensions mm | | | | | | | | Weight/ 100 pcs. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mm² | Ø | Part No. | d1 | a | b | d2 | d4 | c1 | c2 | l | ~ kg | pcs. |
| 120 | M10 | **709F10** | 16.2 | 30 | 30 | 10.5 | 21.0 | 14.00 | 14.0 | 57 | 8.31 | 50 |
| | M12 | **709F12** | 16.2 | 30 | 30 | 13.0 | 21.0 | 15.00 | 15.0 | 58 | 8.39 | 50 |
| | M14 | **709F14** | 16.2 | 30 | 30 | 15.0 | 21.0 | 15.00 | 15.0 | 58 | 8.06 | 25 |
| | M16 | **709F16** | 16.2 | 30 | 30 | 17.0 | 21.0 | 16.00 | 16.0 | 59 | 8.17 | 50 |
| | M20 | **709F20** | 16.2 | 30 | 36 | 21.0 | 21.0 | 22.00 | 22.0 | 66 | 9.56 | 25 |
| 150 | M10 | **710F10** | 18.0 | 32 | 34 | 10.5 | 23.0 | 15.00 | 16.0 | 64 | 10.91 | 10 |
| | M12 | **710F12** | 18.0 | 32 | 34 | 13.0 | 23.0 | 16.00 | 17.0 | 65 | 10.89 | 25 |
| | M14 | **710F14** | 18.0 | 32 | 34 | 15.0 | 23.0 | 18.00 | 19.0 | 67 | 11.42 | 10 |
| | M16 | **710F16** | 18.0 | 32 | 34 | 17.0 | 23.0 | 19.00 | 20.0 | 68 | 11.30 | 10 |
| | M20 | **710F20** | 18.0 | 32 | 40 | 21.0 | 23.0 | 21.00 | 22.0 | 70 | 11.36 | 10 |
| 185 | M12 | **711F12** | 20.6 | 35 | 39 | 13 | 26 | 21.5 | 19 | 72 | 15.40 | 10 |
| | M14 | **711F14** | 20.6 | 35 | 39 | 15 | 26 | 21.5 | 19 | 72 | 15.20 | 10 |
| | M16 | **711F16** | 20.6 | 35 | 39 | 17 | 26 | 21.5 | 19 | 72 | 15.00 | 25 |
| | M20 | **711F20** | 20.6 | 35 | 39 | 21 | 26 | 21.5 | 19 | 72 | 14.20 | 10 |
| 240 | M12 | **712F12** | 23.1 | 44 | 41 | 13 | 28 | 16.0 | 17 | 80 | 16.30 | 10 |
| | M14 | **712F14** | 23.1 | 44 | 41 | 15 | 28 | 19.0 | 20 | 83 | 16.80 | 10 |
| | M16 | **712F16** | 23.1 | 44 | 41 | 17 | 28 | 19.0 | 20 | 83 | 16.71 | 25 |
| | M20 | **712F20** | 23.1 | 44 | 41 | 21 | 28 | 21.0 | 22 | 85 | 17.12 | 10 |
| 300 | M12 | **713F12** | 26.1 | 44 | 47 | 13 | 32 | 19.0 | 22 | 96 | 25.60 | 5 |
| | M14 | **713F14** | 26.1 | 44 | 47 | 15 | 32 | 19.0 | 22 | 96 | 26.56 | 5 |
| | M16 | **713F16** | 26.1 | 44 | 47 | 17 | 32 | 19.0 | 22 | 96 | 25.60 | 5 |
| | M20 | **713F20** | 26.1 | 44 | 47 | 21 | 32 | 22.0 | 22 | 96 | 26.24 | 5 |

▶ Tool: see chart page 47

# Angle tubular cable lugs, copper, 10 - 185 mm², 90° angle

For fine strand conductors, DIN VDE 60228
(e.g. VDE 0295 Class 5 and 6)






## Flared cable entry to ease insertion

### Characteristics

- Annealed material optimises material and crimping characteristics
- Flat contact surface by special manufacturing processes
- Tube dimensions suitable for fine strand conductors

### Material

- Copper to EN 13600

### Surface

- Tin plated

### Order info

- 45° angle version also available, part number with „45“
- Also available with inspection hole, part number with „ms“

| Cross-section mm² | Size of bolt Ø | Part No. | Dimensions mm | | | | | | | Weight/ 100 pcs. ~ kg | pcs. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | d1 | a | b | d2 | d4 | c1 | l3 min. | | |
| 10 | M5 | **742F5** | 5.5 | 14 | 12 | 5.3 | 8.0 | 6.25 | 7.5 | 0.80 | 50 |
| | M6 | **742F6** | 5.5 | 14 | 12 | 6.5 | 8.0 | 6.25 | 7.5 | 0.78 | 50 |
| | M8 | **742F8** | 5.5 | 14 | 16 | 8.5 | 8.0 | 9.00 | 9.5 | 0.84 | 50 |
| | M10 | **742F10** | 5.5 | 14 | 16 | 10.5 | 8.0 | 10.50 | 12.0 | 0.88 | 50 |
| | M12 | **742F12** | 5.5 | 14 | 19 | 13.0 | 8.0 | 12.00 | 13.0 | 0.90 | 50 |
| 16 | M5 | **743F5** | 6.6 | 15 | 13 | 5.3 | 9.5 | 6.25 | 7.5 | 1.12 | 50 |
| | M6 | **743F6** | 6.6 | 15 | 13 | 6.5 | 9.5 | 6.25 | 7.5 | 1.12 | 50 |
| | M8 | **743F8** | 6.6 | 15 | 16 | 8.5 | 9.5 | 10.00 | 10.0 | 1.30 | 50 |
| | M10 | **743F10** | 6.6 | 15 | 17 | 10.5 | 9.5 | 12.00 | 12.0 | 1.38 | 50 |
| | M12 | **743F12** | 6.6 | 15 | 19 | 13.0 | 9.5 | 13.00 | 13.0 | 1.34 | 50 |
| 25 | M5 | **744F5** | 7.9 | 17 | 15 | 5.3 | 11.0 | 7.50 | 7.5 | 1.52 | 25 |
| | M6 | **744F6** | 7.9 | 17 | 15 | 6.5 | 11.0 | 7.50 | 7.5 | 1.54 | 25 |
| | M8 | **744F8** | 7.9 | 17 | 17 | 8.5 | 11.0 | 10.00 | 10.0 | 1.80 | 25 |
| | M10 | **744F10** | 7.9 | 17 | 17 | 10.5 | 11.0 | 12.00 | 12.0 | 1.79 | 25 |
| | M12 | **744F12** | 7.9 | 17 | 19 | 13.0 | 11.0 | 13.00 | 13.0 | 1.76 | 25 |
| 35 | M6 | **745F6** | 9.2 | 19 | 17 | 6.5 | 12.5 | 7.50 | 7.5 | 2.02 | 25 |
| | M8 | **745F8** | 9.2 | 19 | 18 | 8.5 | 12.5 | 10.00 | 10.0 | 2.18 | 25 |
| | M10 | **745F10** | 9.2 | 19 | 18 | 10.5 | 12.5 | 12.00 | 12.0 | 2.30 | 25 |
| | M12 | **745F12** | 9.2 | 19 | 19 | 13.0 | 12.5 | 13.00 | 13.0 | 2.26 | 25 |
| | M14 | **745F14** | 9.2 | 19 | 21 | 15.0 | 12.5 | 14.50 | 14.5 | 2.65 | 25 |
| 50 | M6 | **746F6** | 11.0 | 21 | 21 | 6.5 | 15.0 | 10.00 | 10.0 | 3.75 | 25 |
| | M8 | **746F8** | 11.0 | 21 | 21 | 8.5 | 15.0 | 10.00 | 10.0 | 3.57 | 25 |
| | M10 | **746F10** | 11.0 | 21 | 21 | 10.5 | 15.0 | 12.00 | 12.0 | 3.83 | 25 |
| | M12 | **746F12** | 11.0 | 21 | 21 | 13.0 | 15.0 | 13.00 | 13.0 | 3.74 | 25 |
| | M14 | **746F14** | 11.0 | 21 | 23 | 15.0 | 15.0 | 14.50 | 14.5 | 4.20 | 25 |
| | M16 | **746F16** | 11.0 | 21 | 28 | 17.0 | 15.0 | 16.00 | 16.0 | 4.35 | 25 |
| 70 | M8 | **747F8** | 13.0 | 25 | 25 | 8.5 | 17.0 | 10.00 | 10.0 | 4.83 | 25 |
| | M10 | **747F10** | 13.0 | 25 | 25 | 11.0 | 17.0 | 12.00 | 12.0 | 5.18 | 25 |
| | M12 | **747F12** | 13.0 | 25 | 25 | 13.0 | 17.0 | 13.00 | 13.0 | 5.16 | 25 |
| | M14 | **747F14** | 13.0 | 25 | 25 | 15.0 | 17.0 | 14.50 | 14.5 | 5.38 | 25 |
| | M16 | **747F16** | 13.0 | 25 | 25 | 17.0 | 17.0 | 16.00 | 16.0 | 6.50 | 25 |

## Angle tubular cable lugs, copper, 10 - 185 mm², 90° angle

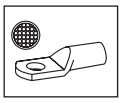
For fine strand conductors, DIN VDE 60228
(e.g. VDE 0295 Class 5 and 6)

| Cross-section mm² | Size of bolt Ø | Part No. | Dimensions mm d1 | a | b | d2 | d4 | c1 | l3 min. | Weight/ 100 pcs. ~ kg | pcs. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 95 | M8 | **748F8** | 14.5 | 26 | 28 | 8.5 | 19.0 | 12.00 | 12.0 | 6.66 | 25 |
| | M10 | **748F10** | 14.5 | 26 | 28 | 11.0 | 19.0 | 12.00 | 12.0 | 6.04 | 25 |
| | M12 | **748F12** | 14.5 | 26 | 28 | 13.0 | 19.0 | 13.00 | 13.0 | 6.58 | 25 |
| | M14 | **748F14** | 14.5 | 26 | 28 | 15.0 | 19.0 | 14.50 | 14.5 | 7.24 | 25 |
| | M16 | **748F16** | 14.5 | 26 | 28 | 17.0 | 19.0 | 16.00 | 16.0 | 7.34 | 25 |
| 120 | M10 | **749F10** | 16.2 | 30 | 30 | 11.0 | 21.0 | 14.00 | 14.0 | 8.76 | 10 |
| | M12 | **749F12** | 16.2 | 30 | 30 | 13.0 | 21.0 | 15.00 | 15.0 | 8.76 | 10 |
| | M14 | **749F14** | 16.2 | 30 | 30 | 15.0 | 21.0 | 15.00 | 15.0 | 9.15 | 10 |
| | M16 | **749F16** | 16.2 | 30 | 30 | 17.0 | 21.0 | 16.00 | 16.0 | 8.54 | 10 |
| | M20 | **749F20** | 16.2 | 30 | 36 | 21.0 | 21.0 | 22.00 | 22.0 | 9.60 | 10 |
| 150 | M10 | **750F10** | 18.0 | 32 | 34 | 11 | 23 | 15.0 | 16 | 11.54 | 10 |
| | M12 | **750F12** | 18.0 | 32 | 34 | 13 | 23 | 16.0 | 18 | 11.58 | 10 |
| | M14 | **750F14** | 18.0 | 32 | 34 | 15 | 23 | 18.0 | 19 | 11.90 | 10 |
| | M16 | **750F16** | 18.0 | 32 | 34 | 17 | 23 | 19.0 | 20 | 11.80 | 10 |
| | M20 | **750F20** | 18.0 | 32 | 40 | 21 | 23 | 21.0 | 22 | 12.00 | 10 |
| 185 | M12 | **751F12** | 20.6 | 35 | 39 | 13 | 26 | 21.5 | 19 | 16.36 | 10 |
| | M14 | **751F14** | 20.6 | 35 | 39 | 15 | 26 | 21.5 | 19 | 16.20 | 10 |
| | M16 | **751F16** | 20.6 | 35 | 39 | 17 | 26 | 21.5 | 19 | 15.36 | 10 |
| | M20 | **751F20** | 20.6 | 35 | 39 | 21 | 26 | 21.5 | 19 | 15.80 | 10 |

▶ Tool: see chart page 47

## Butt-connector, copper 10 - 150 mm²

For fine strand conductors, DIN VDE 60228
(e.g. VDE 0295 Class 5 and 6)



- **Flared cable entry to ease insertion**
- **With buttmarks for precise cable insertion**

### Characteristics

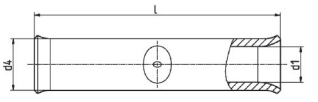
- Annealed material optimises material and crimping characteristics
- Tube dimensions suitable for fine strand conductors

### Material

- Copper to EN 13600

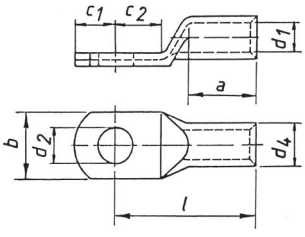
### Surface

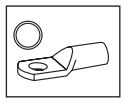
- Tin plated




| Cross-section mm² | Part No. | Dimensions mm d1 | d4 | l | Weight/ 100 pcs. ~ kg | pcs. |
|---|---|---|---|---|---|---|
| 10 | **722F** | 5.5 | 8.0 | 38 | 0.90 | 100 |
| 16 | **723F** | 6.6 | 9.5 | 38 | 1.25 | 100 |
| 25 | **724F** | 7.9 | 11.0 | 38 | 1.56 | 50 |
| 35 | **725F** | 9.2 | 12.5 | 45 | 2.19 | 50 |
| 50 | **726F** | 11.0 | 15.0 | 45 | 3.37 | 50 |
| 70 | **727F** | 13.0 | 17.0 | 54 | 4.65 | 50 |
| 95 | **728F** | 14.5 | 19.0 | 56 | 6.05 | 25 |
| 120 | **729F** | 16.2 | 21.0 | 60 | 7.58 | 25 |
| 150 | **730F** | 18.0 | 23.0 | 68 | 9.83 | 10 |

▶ Tool: see chart page 47



## Tubular cable lugs, copper 6 - 50 mm²

Special type, for solid conductors (re) e.g. to VDE 0295 Class 1

**Tube dimensions suitable for solid conductors**

### Characteristics

- Annealed material optimises material and crimping characteristics

### Material

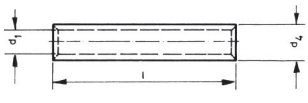
- Copper to EN 13600

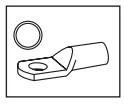
### Surface

- Tin plated

| Cross-section mm² | Size of bolt Ø | Part No. | Dimensions mm d1 | a | b | d2 | d4 | c1 | c2 | l | Weight/ 100 pcs. ~ kg | pcs. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | M5 | **SR65** | 3.0 | 8 | 9.0 | 5.3 | 5 | 4.75 | 6.0 | 17.0 | 0.213 | 25 |
| | M6 | **SR66** | 3.0 | 8 | 10.0 | 6.5 | 5 | 6.50 | 6.5 | 19.0 | 0.220 | 25 |
| 10 | M6 | **SR106** | 4.0 | 9 | 10.0 | 6.5 | 6 | 7.00 | 6.5 | 19.0 | 0.300 | 25 |
| | M8 | **SR108** | 4.0 | 9 | 14.0 | 8.5 | 6 | 8.50 | 9.5 | 22.0 | 0.320 | 25 |
| 16 | M6 | **SR166** | 5.0 | 12 | 12.5 | 6.5 | 8 | 6.50 | 7.0 | 23.5 | 0.800 | 25 |
| | M8 | **SR168** | 5.0 | 12 | 15.0 | 8.5 | 8 | 9.00 | 9.0 | 26.0 | 0.900 | 25 |
| 25 | M6 | **SR256** | 6.2 | 15 | 14.0 | 6.5 | 10 | 7.50 | 7.5 | 30.0 | 1.560 | 25 |
| | M8 | **SR258** | 6.2 | 15 | 16.0 | 8.5 | 10 | 10.00 | 10.0 | 32.0 | 1.700 | 25 |
| 35 | M6 | **SR356** | 7.0 | 15 | 14.0 | 6.5 | 10 | 7.50 | 7.5 | 30.0 | 1.200 | 25 |
| | M8 | **SR358** | 7.0 | 15 | 16.0 | 8.5 | 10 | 10.00 | 10.0 | 32.0 | 1.310 | 25 |
| | M10 | **SR3510** | 7.0 | 15 | 18.0 | 10.5 | 10 | 12.00 | 12.0 | 34.0 | 1.570 | 25 |
| 50 | M6 | **SR506** | 8.5 | 17 | 17.0 | 6.5 | 12 | 7.50 | 7.5 | 32.0 | 1.850 | 25 |
| | M8 | **SR508** | 8.5 | 17 | 17.0 | 8.5 | 12 | 10.00 | 10.0 | 34.0 | 2.000 | 25 |
| | M10 | **SR5010** | 8.5 | 17 | 19.0 | 10.5 | 12 | 12.00 | 12.0 | 37.0 | 2.130 | 25 |

▶ Tool: see chart page 49



## Butt-connector, copper 1.5 - 50 mm²

Special type, for solid conductors (re) e.g. to VDE 0295 Class 1

**Tube dimensions suitable for solid conductors**

### Characteristics

- Annealed material optimises material and crimping characteristics

### Material

- Copper to EN 13600

### Surface

- Tin plated

| Cross-section mm² | Part No. | Wire Ø | Dimensions mm d1 | d4 | l | Weight/ 100 pcs. ~ kg | pcs. |
|---|---|---|---|---|---|---|---|
| 1.5-2.5 | **SV1525** | 1.38/1.78 | 1.9 | 3.9 | 25 | 0.210 | 100 |
| 4 | **SV4** | 2.25 | 2.4 | 4.4 | 25 | 0.240 | 100 |
| 6 | **SV6** | 2.75 | 3.0 | 5.0 | 25 | 0.275 | 100 |

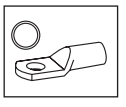
## Butt-connector, copper 1.5 - 50 mm²

Special type, for solid conductors (re) e.g. to VDE 0295 Class 1

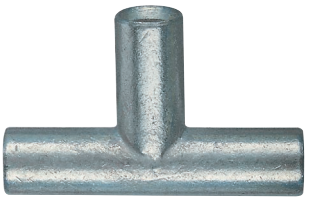
| Cross-section mm² | Part No. | Wire Ø | Dimensions mm d1 | d4 | l | Weight/ 100 pcs. ~ kg | pcs. |
|---|---|---|---|---|---|---|---|
| 10 | **SV10** | 3.55 | 4.0 | 6.0 | 25 | 0.350 | 100 |
| 16 | **SV16** | 4.5 | 5.0 | 8.0 | 35 | 0.960 | 100 |
| 25 | **SV25** | 5.65 | 6.2 | 10.0 | 40 | 1.700 | 50 |
| 35 | **SV35** | 6.7 | 7.0 | 10.0 | 40 | 1.420 | 50 |
| 50 | **SV50** | 8 | 8.5 | 12.0 | 70 | 3.550 | 50 |

▶ Tool: see chart page 49

## T-connectors, copper 1.5 - 50 mm²



Special type, for solid conductors (re) e.g. to VDE 0295 Class 1



### For single cable tap conductors

**Characteristics**

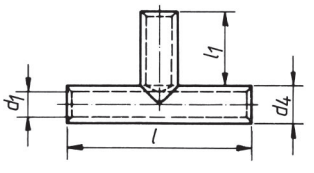
- Annealed material optimises material and crimping characteristics
- Tube dimensions suitable for solid conductors

**Material**

- Copper to EN 13600

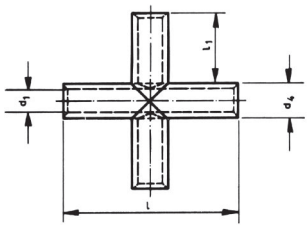
**Surface**

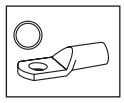
- Tin plated




| Cross-section mm² | Part No. | Wire Ø | Dimensions mm d1 | d4 | l | l1 | Weight/ 100 pcs. ~ kg | pcs. |
|---|---|---|---|---|---|---|---|---|
| 1.5-2.5 | **STV1525** | 1.38/1.78 | 1.9 | 3.9 | 30 | 12 | 0.34 | 50 |
| 4 | **STV4** | 2.25 | 2.4 | 4.4 | 30 | 12 | 0.40 | 50 |
| 6 | **STV6** | 2.75 | 3.0 | 5.0 | 30 | 12 | 0.48 | 50 |
| 10 | **STV10** | 3.55 | 4.0 | 6.0 | 35 | 14 | 0.72 | 50 |
| 16 | **STV16** | 4.5 | 5.0 | 8.0 | 35 | 14 | 1.40 | 50 |
| 25 | **STV25** | 5.65 | 6.2 | 10.0 | 50 | 21 | 3.20 | 25 |
| 35 | **STV35** | 6.7 | 7.0 | 10.0 | 55 | 23 | 2.95 | 25 |
| 50 | **STV50** | 8 | 8.5 | 12.0 | 76 | 32 | 5.60 | 25 |

▶ Tool: see chart page 49



## Cross-connector, copper 1.5 - 50 mm²

Special type, for solid conductors (re) e.g. to VDE 0295 Class 1

**For double cable tap conductor**

### Characteristics

- Annealed material optimises material and crimping characteristics
- Tube dimensions suitable for solid conductors

### Material

- Copper to EN 13600

### Surface

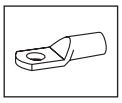
- Tin plated

| Cross-section mm² | Part No. | Wire Ø | Dimensions mm d1 | d4 | l | l1 | Weight/ 100 pcs. ~ kg | pcs. |
|---|---|---|---|---|---|---|---|---|
| 1.5-2.5 | **SKV1525** | 1.38/1.78 | 1.9 | 3.9 | 30 | 12 | 0.47 | 25 |
| 4 | **SKV4** | 2.25 | 2.4 | 4.4 | 30 | 12 | 0.56 | 25 |
| 6 | **SKV6** | 2.75 | 3.0 | 5.0 | 30 | 12 | 0.67 | 25 |
| 10 | **SKV10** | 3.55 | 4.0 | 6.0 | 35 | 14 | 0.92 | 25 |
| 16 | **SKV16** | 4.5 | 5.0 | 8.0 | 35 | 14 | 1.86 | 25 |
| 25 | **SKV25** | 5.65 | 6.2 | 10.0 | 50 | 21 | 4.20 | 15 |
| 35 | **SKV35** | 6.7 | 7.0 | 10.0 | 55 | 23 | 3.80 | 15 |
| 50 | **SKV50** | 8 | 8.5 | 12.0 | 76 | 32 | 7.35 | 15 |

▶ Tool: see chart page 49

## Tubular cable lug for switch gear connections, copper 35 - 300 mm²

Narrow palm version



- **For connections in switch cabinets with reduced connecting space**
- **For stranded conductors e.g. VDE 0295 Class 2**

### Characteristics

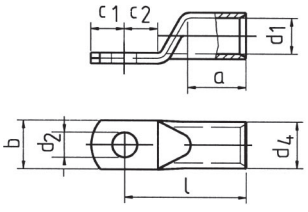
- Annealed material optimises material and crimping characteristics

### Material

- Copper to EN 13600

### Surface

- Tin plated

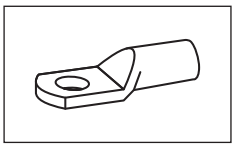



### Order info

- Also available with inspection hole, part number with „ms“

| Cross-section | Size of bolt | | Dimensions mm | | | | | | | | Weight/ 100 pcs. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mm² | Ø | Part No. | d1 | a | b | d2 | d4 | c1 | c2 | l | ~ kg | pcs. |
| 35 | M6 | **5SG6** | 8.5 | 17 | 15.0 | 6.5 | 12.0 | 7.5 | 7.5 | 32 | 1.78 | 25 |
| 50 | M6 | **6SG6** | 10.0 | 19 | 15.0 | 6.5 | 14.0 | 10.0 | 10.0 | 37 | 2.95 | 25 |
| | M8 | **6SG8** | 10.0 | 19 | 17.0 | 8.5 | 14.0 | 10.0 | 10.0 | 37 | 2.82 | 25 |
| | M10 | **6SG10** | 10.0 | 19 | 19.0 | 10.5 | 14.0 | 11.5 | 12.0 | 39 | 3.08 | 25 |
| 70 | M6 | **7SG6** | 12.0 | 21 | 17.0 | 6.5 | 16.5 | 10.0 | 10.0 | 43 | 4.22 | 25 |
| | M8 | **7SG8** | 12.0 | 21 | 17.0 | 8.5 | 16.5 | 10.0 | 10.0 | 43 | 4.10 | 25 |
| | M10 | **7SG10** | 12.0 | 21 | 19.0 | 10.5 | 16.5 | 11.5 | 12.0 | 44 | 4.45 | 25 |
| | M12 | **7SG12** | 12.0 | 21 | 19.0 | 13.0 | 16.5 | 13.0 | 13.0 | 46 | 4.22 | 25 |
| 95 | M6 | **8SG6** | 13.5 | 25 | 19.0 | 6.5 | 18.0 | 11.5 | 12.0 | 48 | 5.49 | 25 |
| | M8 | **8SG8** | 13.5 | 25 | 19.0 | 8.5 | 18.0 | 11.5 | 12.0 | 48 | 5.46 | 25 |
| | M10 | **8SG10** | 13.5 | 25 | 19.0 | 10.5 | 18.0 | 11.5 | 12.0 | 48 | 5.13 | 25 |
| | M12 | **8SG12** | 13.5 | 25 | 19.0 | 13.0 | 18.0 | 13.0 | 13.0 | 49 | 5.15 | 25 |
| 120 | M6 | **9SG6** | 15.0 | 26 | 19.0 | 6.5 | 19.5 | 11.5 | 14.0 | 51 | 6.16 | 10 |
| | M8 | **9SG8** | 15.0 | 26 | 19.0 | 8.5 | 19.5 | 11.5 | 14.0 | 51 | 5.94 | 10 |
| | M10 | **9SG10** | 15.0 | 26 | 19.0 | 10.5 | 19.5 | 11.5 | 14.0 | 51 | 5.81 | 10 |
| | M12 | **9SG12** | 15.0 | 26 | 19.0 | 13.0 | 19.5 | 14.0 | 14.0 | 51 | 5.92 | 10 |
| 150 | M6 | **10SG6** | 16.5 | 30 | 19.0 | 6.5 | 21.0 | 11.5 | 14.0 | 56 | 6.85 | 10 |
| | M8 | **10SG8** | 16.5 | 30 | 19.0 | 8.5 | 21.0 | 11.5 | 14.0 | 56 | 6.80 | 10 |
| | M10 | **10SG10** | 16.5 | 30 | 19.0 | 10.5 | 21.0 | 11.5 | 14.0 | 56 | 6.75 | 10 |
| | M12 | **10SG12** | 16.5 | 30 | 19.0 | 13.0 | 21.0 | 15.0 | 15.0 | 57 | 7.15 | 10 |
| 185 | M10 | **11SG10** | 19.0 | 30 | 24.5 | 10.5 | 24.0 | 11.5 | 18.0 | 65 | 10.59 | 10 |
| | M12 | **11SG12** | 19.0 | 30 | 31.0 | 13.0 | 24.0 | 18.0 | 18.0 | 65 | 11.09 | 10 |
| | M16 | **11SG16** | 19.0 | 30 | 31.0 | 17.0 | 24.0 | 18.0 | 18.0 | 65 | 9.76 | 10 |
| 240 | M10 | **12SG10** | 21.0 | 35 | 31.0 | 10.5 | 26.0 | 11.5 | 19.0 | 72 | 12.70 | 5 |
| | M12 | **12SG12** | 21.0 | 35 | 31.0 | 13.0 | 26.0 | 21.5 | 19.0 | 72 | 13.72 | 5 |
| | M16 | **12SG16** | 21.0 | 35 | 31.0 | 17.0 | 26.0 | 21.5 | 19.0 | 72 | 13.28 | 5 |
| 300 | M10 | **13SG10** | 23.5 | 44 | 31.0 | 10.5 | 30.0 | 11.5 | 24.0 | 87 | 19.70 | 5 |
| | M12 | **13SG12** | 23.5 | 44 | 31.0 | 13.0 | 30.0 | 24.0 | 24.0 | 87 | 22.72 | 5 |
| | M16 | **13SG16** | 23.5 | 44 | 31.0 | 17.0 | 30.0 | 24.0 | 24.0 | 87 | 22.50 | 5 |

▶ Tool: see chart page 44

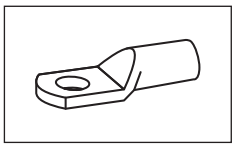


## Tool application chart

**Tubular cable lugs, butt-connectors, parallel connectors and T-connectors „standard type“ and tubular cable lugs for switchgear connections made from Cu**

| Crimping range corresponds to nominal cross-section mm² | Crimping tools | | Tool type | | | | | | Crimping profile | Page (Tool) |
|---|---|---|---|---|---|---|---|---|---|---|
| | Tools | Crimping head/ adapter | Mechanical crimping tools | mechanical, electrical, pneumatic, crimping tools with interchangeable dies/heads | hand hydraulic crimping tools | Battery powered crimping tools | Hydraulic crimping systems | Hydraulic crimping heads | | |
| 0.5-6 | K13 | | • | | | | | | | 257 |
| 0.75-2.5 | KP1 | +KP232 | | • | | | | | | 267 |
| | KP1L | +KP232 | | • | | | | | | 267 |
| | EKP1 | +KP232 | | | | • | | | | 322 |
| | TEKP1 | +KP232 | | • | | | | | | 419 |
| | KPM15 | +KP232 | | • | | | | | | 420 |
| 0.75-10 | K50 | | | • | | | | | | 271 |
| | EK1550 | | | | | • | | | | 316 |
| | EK1550G | | | | | • | | | | 320 |
| | EK1550ST | | | | | • | | | | 318 |
| 0.75-16 | K2 | | • | | | | | | | 257 |
| 1-4 | K511 | | • | | | | | | | 278 |
| 4-10 | KP1 | +KP242 | | • | | | | | | 267 |
| | KP1L | +KP242 | | • | | | | | | 267 |
| | EKP1 | +KP242 | | | | • | | | | 322 |
| | TEKP1 | +KP242 | | • | | | | | | 419 |
| | KPM15 | +KP242 | | • | | | | | | 420 |
| 6-50 | K5 | | • | | | | | | | 260 |
| | K05 | | • | | | | | | | 262 |
| 6+10 | K512 | | • | | | | | | | 278 |
| 6-120 | EK354 | | | | | • | | | | 324 |
| 6-185 | K18 | | | • | | | | | | 274 |
| | HK6018 | | | | • | | | | | 294 |
| | EK18PLUS | | | | | • | | | | 326 |
| | PK18 | | | | | | | • | | 387 |
| | THK18 | | | | | | • | | | 358 |
| | HK60UNV | + UA18 | | | • | | | | | 309 |
| | EK60UNV | + UA18 | | | | • | | | | 347 |
| | PK60UNV | + UA18 | | | | | | • | | 405 |
| 6-300 | K22 | | | • | | | | | | 276 |
| | HK6022 | | | | • | | | | | 296 |
| | EK22PLUS | | | | | • | | | | 328 |
| | PK22 | | | | | | | • | | 389 |
| | THK22 | | | | | | • | | | 360 |
| | HK60UNV | + UA22 | | | • | | | | | 309 |
| | EK60UNV | + UA22 | | | | • | | | | 347 |
| | PK60UNV | + UA22 | | | | | | • | | 405 |

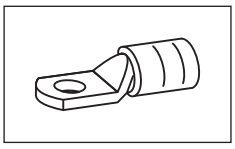
See next page



## Tool application chart

**Tubular cable lugs, butt-connectors, parallel connectors and T-connectors „standard type“ and tubular cable lugs for switchgear connections made from Cu**

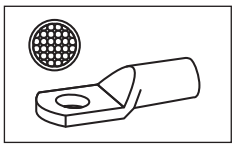
| Crimping range corresponds to nominal cross-section mm² | Crimping tools | | Tool type | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Tools | Crimping head/ adapter | Mechanical crimping tools | mechanical, electrical, pneumatic, crimping tools with interchangeable dies/heads | hand hydraulic crimping tools | Battery powered crimping tools | Hydraulic crimping systems | Hydraulic crimping heads | Crimping profile | Page (Tool) |
| 10-120 | K06 | | • | | | | | | ⬡ | 264 |
| 10-240 | HK60VP | | | | • | | | | ✕ | 298 |
| | EK60VPPLUS | | | | | • | | | ✕ | 330 |
| | PK60VP | | | | | | | • | ✕ | 391 |
| 16-95 | K08 | | • | | | | | | ⬡ | 263 |
| | K95 | | • | | | | | | ◡ | 259 |
| | TK95 | | • | | | | | | ◡ | 259 |
| 16-300 | HK60VPFT | | | | • | | | | ✕ | 299 |
| | EK60VPFTPLUS | | | | | • | | | ✕ | 331 |
| | PK60VPFT | | | | | | | • | ✕ | 392 |
| 16-400 | HK12025 | | | | • | | | | ⬡ | 300 |
| | HK12042 | | | | • | | | | ⬡ | 302 |
| | HK120U | | | | • | | | | ⬡ | 304 |
| | EK12025 | | | | | • | | | ⬡ | 332 |
| | EK12042 | | | | | • | | | ⬡ | 334 |
| | EK120UPLUS | | | | | • | | | ⬡ | 336 |
| | HK122 | | | | | | • | | ⬡ | 362 |
| | HK122EL220 | | | | | | • | | ⬡ | 367 |
| | HK122EL380 | | | | | | • | | ⬡ | 367 |
| | PK12038 | | | | | | | • | ⬡ | 393 |
| | PK120U | | | | | | | • | ⬡ | 395 |
| | HK252 | | | | | | • | | ⬡ | 364 |
| | HK252EL220 | | | | | | • | | ⬡ | 369 |
| | HK252EL380 | | | | | | • | | ⬡ | 369 |
| | PK252 | | | | | | | • | ⬡ | 397 |
| 25-150 | K09 | | • | | | | | | ⬡ | 265 |
| 35-95 | K8 | | • | | | | | | ⌓ | 262 |
| 50-120 | K6 | | • | | | | | | ⌓ | 260 |
| 120-240 | K7 | | • | | | | | | ⌓ | 261 |
| 185-400 | K07 | | • | | | | | | ⌓ | 261 |



## Tool application chart

**Insulated tubular cable lugs and butt-connectors „standard type“**

| Crimping range corresponds to nominal cross-section mm² | Crimping tools | | Tool type | | | | | | Crimping profile | Page (Tool) |
|---|---|---|---|---|---|---|---|---|---|---|
| | Tools | Crimping head/ adapter | Mechanical crimping tools | mechanical, electrical, pneumatic, crimping tools with interchangeable dies/heads | hand hydraulic crimping tools | Battery powered crimping tools | Hydraulic crimping systems | Hydraulic crimping heads | | |
| **10-70** | EK354 | | | | | • | | | ⬭ | 324 |
| **10-95** | K18 | | | • | | | | | ⬭ | 274 |
| | HK6018 | | | | • | | | | ⬭ | 294 |
| | EK18PLUS | | | | | • | | | ⬭ | 326 |
| | PK18 | | | | | | | • | ⬭ | 387 |
| | THK18 | | | | | | • | | ⬭ | 358 |
| | HK60UNV | + UA18 | | | • | | | | ⬭ | 309 |
| | EK60UNV | + UA18 | | | | • | | | ⬭ | 347 |
| | PK60UNV | + UA18 | | | | | | • | ⬭ | 405 |
| **10-150** | K22 | | | • | | | | | ⬭ | 276 |
| | HK6022 | | | | • | | | | ⬭ | 296 |
| | EK22PLUS | | | | | • | | | ⬭ | 328 |
| | PK22 | | | | | | | • | ⬭ | 389 |
| | THK22 | | | | | | • | | ⬭ | 360 |
| | HK60UNV | + UA22 | | | • | | | | ⬭ | 309 |
| | EK60UNV | + UA22 | | | | • | | | ⬭ | 347 |
| | PK60UNV | + UA22 | | | | | | • | ⬭ | 405 |
| | HK12025 | | | | • | | | | ⬭ | 300 |
| | HK12042 | | | | • | | | | ⬭ | 302 |
| | HK120U | | | | • | | | | ⬭ | 304 |
| | EK12025 | | | | | • | | | ⬭ | 332 |
| | EK12042 | | | | | • | | | ⬭ | 334 |
| | EK120UPLUS | | | | | • | | | ⬭ | 336 |
| | HK122 | | | | | | • | | ⬭ | 362 |
| | HK122EL220 | | | | | | • | | ⬭ | 367 |
| | HK122EL380 | | | | | | • | | ⬭ | 367 |
| | PK12038 | | | | | | | • | ⬭ | 393 |
| | PK120U | | | | | | | • | ⬭ | 395 |
| | HK252 | | | | | | • | | ⬭ | 364 |
| | HK252EL220 | | | | | | • | | ⬭ | 369 |
| | HK252EL380 | | | | | | • | | ⬭ | 369 |
| | PK252 | | | | | | | • | ⬭ | 397 |



## Tool application chart

**Tubular cable lugs and butt-connectors for fine stranded conductors**

| Crimping range corresponds to nominal cross-section mm² | Crimping tools | | Tool type | | | | | | Crimping profile | Page (Tool) |
|---|---|---|---|---|---|---|---|---|---|---|
| | Tools | Crimping head/ adapter | Mechanical crimping tools | mechanical, electrical, pneumatic, crimping tools with interchangeable dies/heads | hand hydraulic crimping tools | Battery powered crimping tools | Hydraulic crimping systems | Hydraulic crimping heads | | |
| 10-50 | EK354 | | | | | • | | | | 324 |
| | K5 | | • | | | | | | | 260 |
| | K18 | | | • | | | | | | 274 |
| | HK6018 | | | | • | | | | | 294 |
| | EK18PLUS | | | | | • | | | | 326 |
| | PK18 | | | | | | | • | | 387 |
| | THK18 | | | | | | • | | | 358 |
| | HK60UNV | + UA18 | | | • | | | | | 309 |
| | EK60UNV | + UA18 | | | | • | | | | 347 |
| | PK60UNV | + UA18 | | | | | | • | | 405 |
| 10-70 | K22 | | | • | | | | | | 276 |
| | HK6022 | | | | • | | | | | 296 |
| | EK22PLUS | | | | | • | | | | 328 |
| | PK22 | | | | | | | • | | 389 |
| | THK22 | | | | | | • | | | 360 |
| | HK60UNV | + UA22 | | | • | | | | | 309 |
| | EK60UNV | + UA22 | | | | • | | | | 347 |
| | PK60UNV | + UA22 | | | | | | • | | 405 |
| 10-240 | HK60VP | | | | • | | | | | 298 |
| | EK60VPPLUS | | | | | • | | | | 330 |
| | PK60VP | | | | | | | • | | 391 |
| 16-95 | K95 | | • | | | | | | | 259 |
| | TK95 | | • | | | | | | | 259 |
| 16-150 | HK60VPFT | | | | • | | | | | 299 |
| | HK12025 | | | | • | | | | | 300 |
| | HK12042 | | | | • | | | | | 302 |
| | HK120U | | | | • | | | | | 304 |
| | EK60VPFTPLUS | | | | | • | | | | 331 |
| | EK12025 | | | | | • | | | | 332 |
| | EK12042 | | | | | • | | | | 334 |
| | EK120UPLUS | | | | | • | | | | 336 |
| | HK122 | | | | | | • | | | 362 |
| | HK122EL220 | | | | | | • | | | 367 |
| | PK60VPFT | | | | | | | • | | 392 |
| | PK12038 | | | | | | | • | | 393 |
| | PK120U | | | | | | | • | | 395 |

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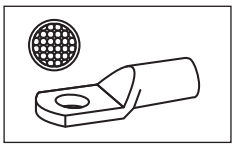
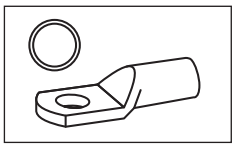


## Tool application chart

**Tubular cable lugs and butt-connectors for fine stranded conductors**

| Crimping range corresponds to nominal cross-section mm² | Crimping tools | | Tool type | | | | | | Crimping profile | Page (Tool) |
|---|---|---|---|---|---|---|---|---|---|---|
| | Tools | Crimping head/ adapter | Mechanical crimping tools | mechanical, electrical, pneumatic, crimping tools with interchangeable dies/heads | hand hydraulic crimping tools | Battery powered crimping tools | Hydraulic crimping systems | Hydraulic crimping heads | | |
| 16-300 | HK252 | | | | | | • | | | 364 |
| | HK252EL220 | | | | | | • | | | 369 |
| | HK252EL380 | | | | | | • | | | 369 |
| | PK252 | | | | | | | • | | 397 |
| 35-95 | K8 | | • | | | | | | | 262 |
| 50-120 | K6 | | • | | | | | | | 260 |
| 120-240 | K7 | | • | | | | | | | 261 |



## Tool application chart

**Tubular cable lugs and connectors for solid conductors**

| Crimping range corresponds to nominal cross-section mm² | Crimping tools | | Tool type | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Tools | Crimping head/ adapter | Mechanical crimping tools | mechanical, electrical, pneumatic, crimping tools with interchangeable dies/heads | hand hydraulic crimping tools | Battery powered crimping tools | Hydraulic crimping systems | Hydraulic crimping heads | Crimping profile | Page (Tool) |
| 0.75-16 | K02 | | • | | | | | | | 258 |
| 1.5-4 | K93 | | • | | | | | | | 256 |
| 1.5-10 | K50 | | | • | | | | | | 271 |
| | EK1550 | | | | | • | | | | 316 |
| | EK1550G | | | | | • | | | | 320 |
| | EK1550ST | | | | | • | | | | 318 |
| 1.5-16 | EK354 | | | | | • | | | | 324 |
| | K18 | | | • | | | | | | 274 |
| | HK6018 | | | | • | | | | | 294 |
| | EK18PLUS | | | | | • | | | | 326 |
| | PK18 | | | | | | | • | | 387 |
| | THK18 | | | | | | • | | | 358 |
| | HK60UNV | + UA18 | | | • | | | | | 309 |
| | EK60UNV | + UA18 | | | | • | | | | 347 |
| | PK60UNV | + UA18 | | | | | | • | | 405 |
| | K22 | | | • | | | | | | 276 |
| | HK6022 | | | | • | | | | | 296 |
| | EK22PLUS | | | | | • | | | | 328 |
| | PK22 | | | | | | | • | | 389 |
| | THK22 | | | | | | • | | | 360 |
| | HK60UNV | + UA22 | | | • | | | | | 309 |
| | EK60UNV | + UA22 | | | | • | | | | 347 |
| | PK60UNV | + UA22 | | | | | | • | | 405 |
| 6-10 | K94 | | • | | | | | | | 256 |
| 25-50* | K05 | | • | | | | | | | 262 |

*For sizes 25 + 35 mm², use the die size 25 mm².
For size 50 mm² use die size 35 mm².
We recommend 2 crimps on each side.

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