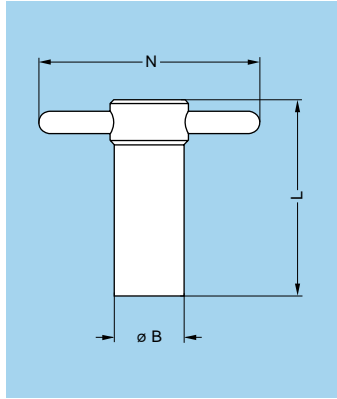
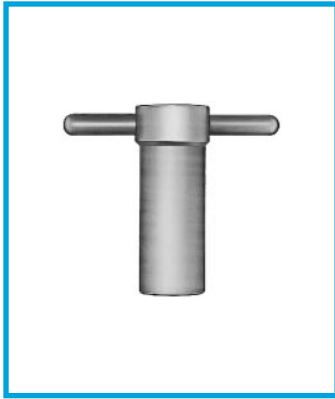


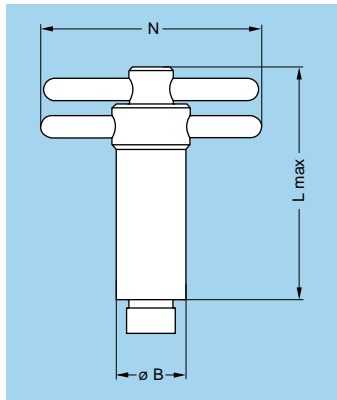
# Tooling



## DCG Spanners for hexagonal nuts

| Part number    | Dimensions (mm) |    |    | Part number of the nut |
|----------------|-----------------|----|----|------------------------|
|                | B               | L  | N  |                        |
| DCG.91.149.0TN | 14              | 40 | 50 | GEA.00.240.LN          |
| DCG.91.161.1TN | 16              | 45 | 52 | GEA.0S.240.LN          |
| DCG.91.201.4TN | 20              | 52 | 65 | GEA.1S.240.LN          |
| DCG.91.231.7TN | 23              | 62 | 68 | GEA.2S.240.LN          |
| DCG.91.282.2TN | 28              | 76 | 73 | GEA.3S.240.LN          |

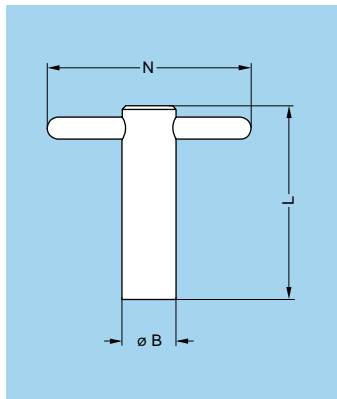
- Material: blackened steel



## DCA Spanners for hexagonal nuts with locator for flats on socket thread

| Part number    | Dimensions (mm) |     |    | Part number of the nut |
|----------------|-----------------|-----|----|------------------------|
|                | B               | L   | N  |                        |
| DCA.91.149.0TN | 14              | 65  | 50 | GEA.00.240.LN          |
| DCA.91.161.1TN | 16              | 73  | 52 | GEA.0S.240.LN          |
| DCA.91.201.4TN | 20              | 85  | 65 | GEA.1S.240.LN          |
| DCA.91.231.7TN | 23              | 100 | 68 | GEA.2S.240.LN          |
| DCA.91.282.2TN | 28              | 120 | 73 | GEA.3S.240.LN          |

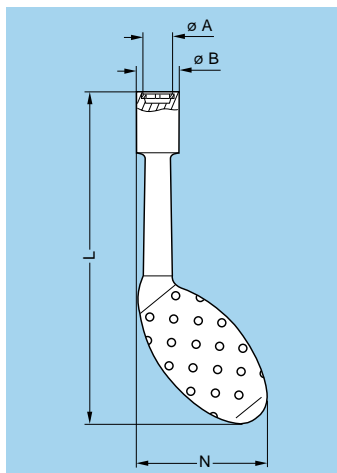
- Material: blackened steel



## DCB Spanners for round nuts

| Part number    | Dimensions (mm) |    |    | Part number of the nut |
|----------------|-----------------|----|----|------------------------|
|                | B               | L  | N  |                        |
| DCB.91.119.0TN | 11              | 40 | 50 | GEB.00.240.LN          |
| DCB.91.131.1TN | 13              | 45 | 50 | GEB.0S.240.LN          |
| DCB.91.161.4TN | 16              | 52 | 65 | GEB.1S.240.LN          |
| DCB.91.201.8TN | 20              | 62 | 65 | GEB.2S.240.LN          |
| DCB.91.242.2TN | 24              | 76 | 70 | GEB.3S.240.LN          |

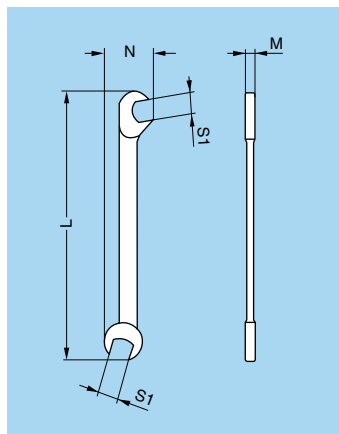
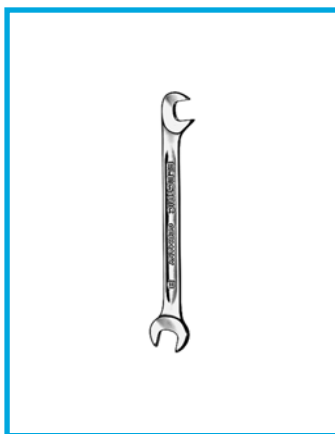
- Material: blackened steel



## DCH Spanners for conical nut

| Part number   | Dimensions (mm) |      |     |      | Part number of the nut |
|---------------|-----------------|------|-----|------|------------------------|
|               | A               | B    | L   | N    |                        |
| DCH.91.101.PN | 10.1            | 12.8 | 124 | 48.3 | GEC.00.240.LC          |
| DCH.91.121.PN | 12.1            | 14.8 | 124 | 49.3 | GEC.0S.240.LC          |
| DCH.91.161.PN | 16.1            | 21.0 | 124 | 51.9 | GEC.1S.240.LC          |
| DCH.91.201.PN | 20.1            | 22.8 | 129 | 53.5 | GEC.2S.240.LC          |

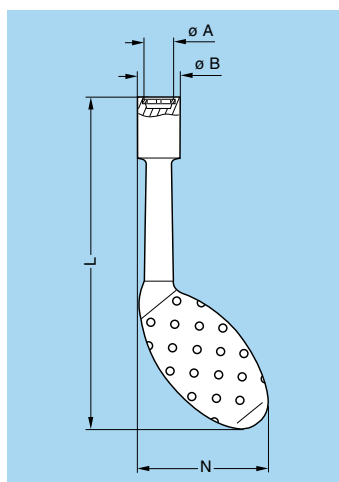
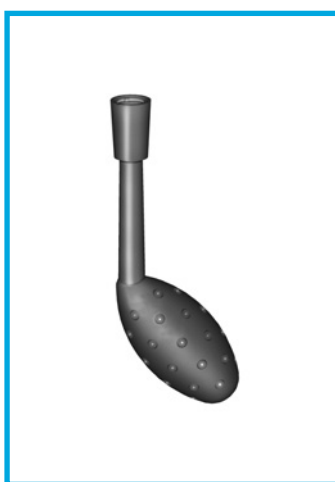
- Material: dark grey polyurethane



### DCP Flat spanners for collet nut

| Part number   | Dimensions (mm) |      |      |     |
|---------------|-----------------|------|------|-----|
|               | L               | M    | N    | S1  |
| DCP.99.040.TC | 70              | 0.95 | 10.5 | 4.0 |
| DCP.99.045.TC | 70              | 2.00 | 10.5 | 4.5 |
| DCP.99.050.TC | 78              | 2.00 | 12.6 | 5.0 |
| DCP.99.055.TC | 78              | 2.00 | 12.6 | 5.5 |
| DCP.99.060.TC | 78              | 2.00 | 12.6 | 6.0 |

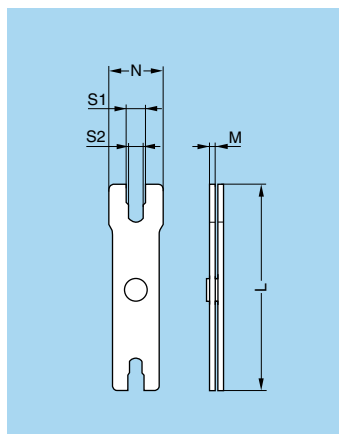
- Material: chrome-plated steel



### DCH Spanners for notched nuts

| Part number   | Dimensions (mm) |      |     |      | Part number of the nut |
|---------------|-----------------|------|-----|------|------------------------|
|               | A               | B    | L   | N    |                        |
| DCH.91.101.PA | 10.1            | 12.8 | 124 | 48.3 | GEG.00.240.LC          |
| DCH.91.121.PA | 12.1            | 14.8 | 124 | 49.3 | GEG.0S.240.LC          |
| DCH.91.181.PA | 18.1            | 22.8 | 129 | 53.1 | GEG.0E.240.LC          |
| DCH.91.161.PA | 16.1            | 21.0 | 124 | 51.2 | GEG.1S.240.LC          |
| DCH.91.201.PA | 20.1            | 22.8 | 129 | 53.5 | GEG.1E.240.LC          |
| DCH.91.141.PA | 14.1            | 18.6 | 124 | 51.2 | GEG.1S.242.LC          |
| DCH.91.201.PA | 20.1            | 22.8 | 129 | 53.5 | GEG.2S.240.LC          |
| DCH.91.241.PA | 24.1            | 30.8 | 134 | 52.6 | GEG.2S.241.LC          |
| DCH.91.251.PA | 25.1            | 32.8 | 134 | 55.5 | GEG.2E.240.LC          |

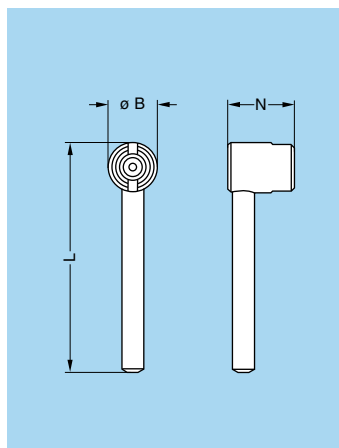
- Material: blue polyurethane



### DCP Set of flat spanners for collet nuts

| Part number   | Series | Dimensions (mm) |     |    |      |      |
|---------------|--------|-----------------|-----|----|------|------|
|               |        | L               | M   | N  | S1   | S2   |
| DCP.91.001.TN | 0B     | 95              | 2.5 | 21 | 8.1  | 7.1  |
|               | 1B     | 95              | 2.5 | 25 | 10.1 | 9.1  |
| DCP.91.023.TN | 2B-2K  | 115             | 3.0 | 30 | 13.1 | 12.1 |
|               | 3B-3K  | 115             | 3.0 | 35 | 15.1 | 14.1 |
| DCP.91.045.TN | 4B     | 130             | 3.5 | 40 | 21.2 | 20.2 |
|               | 5B     | 130             | 3.5 | 45 | 31.2 | 30.2 |

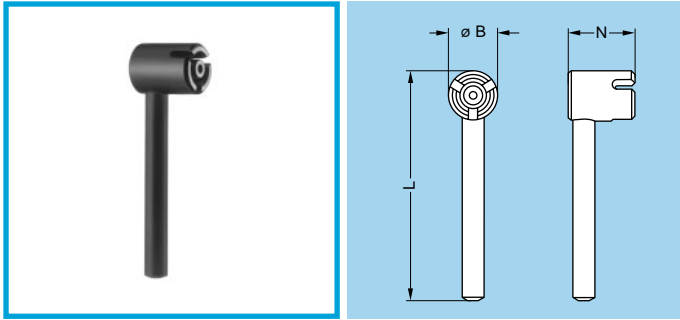
- Material: blackened steel



### DCL Spanners for assembling plugs with 2 latches

| Part number    | Series | Dimensions (mm) |    |      |
|----------------|--------|-----------------|----|------|
|                |        | B               | L  | N    |
| DCL.91.105.0TK | 00     | 10              | 45 | 13.5 |
| DCL.91.127.0TK | 0S     | 12              | 47 | 17.0 |
| DCL.91.149.0TK | 1S     | 14              | 52 | 19.0 |

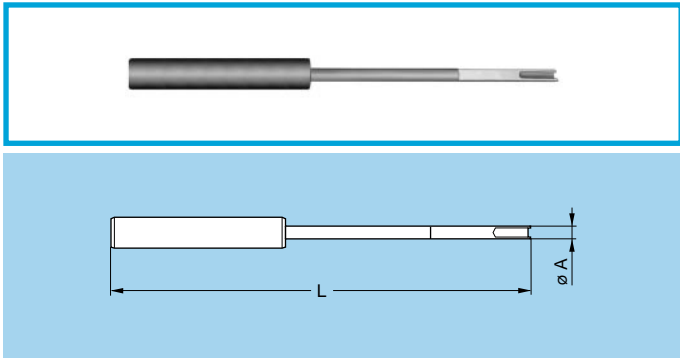
- Material: blackened steel



### DCN Spanners for assembling plugs with 3 latches

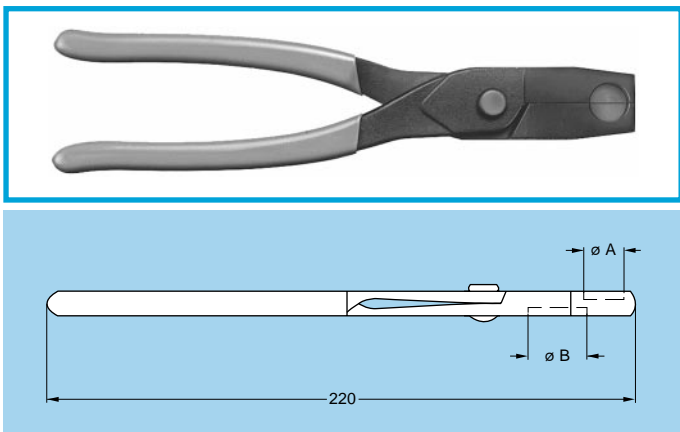
| Part number    | Series | Dimensions (mm) |    |    |
|----------------|--------|-----------------|----|----|
|                |        | B               | L  | N  |
| DCN.91.905.0TK | 00     | 9               | 42 | 12 |
| DCN.91.125.0TK | 0S     | 12              | 47 | 17 |
| DCN.91.149.0TK | 1S     | 14              | 53 | 19 |
| DCN.91.171.2TK | 2S-2C  | 17              | 63 | 20 |
| DCN.91.201.5TK | 3S     | 20              | 74 | 22 |

● Material: blackened steel



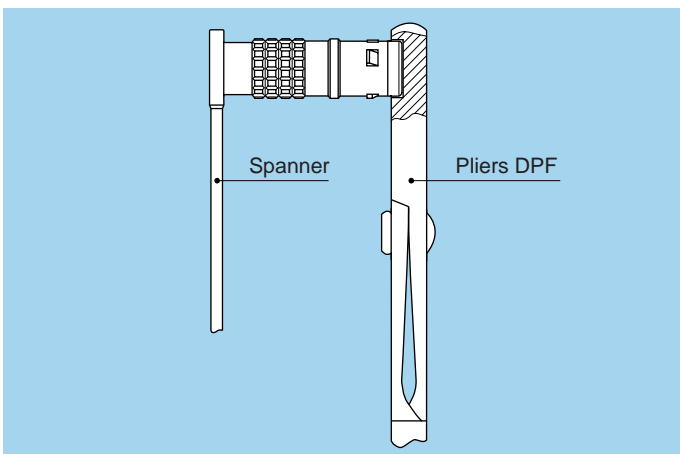
### DCL Assembly tool for FVB.00.303.NLA plugs

| Part number    | Series | Dim. (mm) |     |
|----------------|--------|-----------|-----|
|                |        | A         | L   |
| DCL.91.516.5TK | 00     | 5         | 165 |



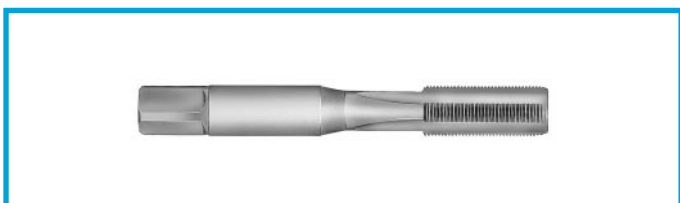
### DPF Pliers for assembling plugs (series K, E and L)

| Part number   | Series   | Dimensions (mm) |    |
|---------------|----------|-----------------|----|
|               |          | A               | B  |
| DPF.91.001.TA | 0E-0K-0L | 10              | –  |
|               | 1E-1K-1L | –               | 12 |
| DPF.91.023.TA | 2E-2K-2L | 15              | –  |
|               | 3E-3K    | –               | 18 |



### Example for use

The plug end must be held in the pliers whilst the nut is tightened with the flat spanner.



### DTA Taps

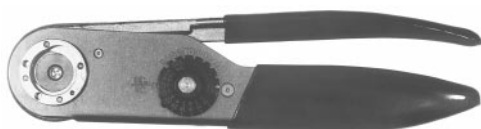
| Part number   | Series | Thread   |
|---------------|--------|----------|
| DTA.99.700.5Z | 00     | M7 x 0.5 |
| DTA.99.900.6Z | 0S-0B  | M9 x 0.6 |

# Crimping tools for electrical contacts

Fig. 1



Fig. 2



## Manual crimping tools

| Supplier | Part number                                       |                                           |                                           |
|----------|---------------------------------------------------|-------------------------------------------|-------------------------------------------|
|          | contact $\varnothing$ 0.5-0.7<br>0.9-1.3 (Fig. 1) | contact $\varnothing$ 1.6-2.0<br>(Fig. 2) | contact $\varnothing$ 3.0-4.0<br>(Fig. 2) |
| LEMO     | DPC.91.701.V <sup>1)</sup>                        | DPC.91.101.A <sup>2)</sup>                | DPC.91.102.V                              |
| DANIELS  | MH860 <sup>1)</sup>                               | AF8 <sup>2)</sup>                         | M300BT                                    |
| ASTRO    | 616336 <sup>1)</sup>                              | 615708 <sup>2)</sup>                      | –                                         |

<sup>1)</sup> According to specification MIL-C-22520/7-01.

<sup>2)</sup> According to specification MIL-C-22520/1-01.

## Pneumatic crimping tools



| Supplier | Part number  |
|----------|--------------|
| LEMO     | DPC.91.701.C |
| BALMAR   | 85230        |
| BUCHANAN | 621101       |

According to specification MIL-C-22520/7-01.  
For LEMO contacts  $\varnothing$  0.5-0.7-0.9-1.3 mm

## DCE Positioners for crimp contacts $\varnothing$ 0.5-0.7-0.9 and 1.3 mm



male



female

These positioners are suitable for use with both manual and pneumatic crimping tools according to the MIL-C-22520/7-01 standard.

Fig. 1

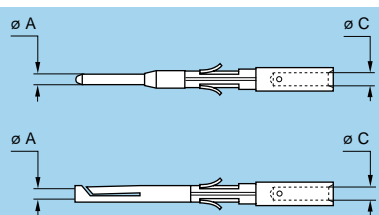
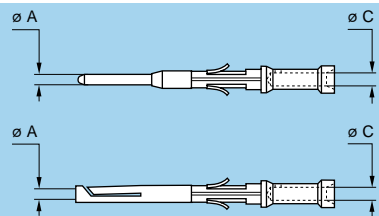


Fig. 2

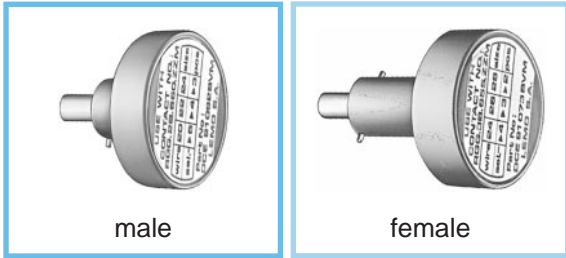


**Note:** a wide variation of strand number and diameter combinations are quoted as being AWG, some of which do not have a large enough cross section to guarantee a crimp as per either MIL-C-22520/1-01 or /7-01. Our technical department is at your disposal to study and propose a solution to all your applications.

**Note:** see table on page 51 for connector selection and the table on page 131 for contact selection.

|                           | Connector + Contact |                 |                 |                |                | Positioners part number |                    |
|---------------------------|---------------------|-----------------|-----------------|----------------|----------------|-------------------------|--------------------|
|                           | Type                | $\varnothing$ A | $\varnothing$ C | U <sub>0</sub> | Conductor AWG  | For male contact        | For female contact |
| <b>00</b>                 | 302                 | 0.5             | 0.45            | 1              | 28-30-32       | DCE.91.050.0VC          | DCE.91.050.0VM     |
|                           | 303                 |                 |                 |                |                |                         |                    |
|                           | 304                 |                 |                 |                |                |                         |                    |
| <b>0B<br/>0K<br/>0S</b>   | 302 <sup>1)</sup>   | 0.9             | 1.10            | 1              | 20-22-24       | DCE.91.090.BVC          | DCE.91.090.BVM     |
|                           | 303                 |                 |                 |                |                |                         |                    |
|                           | 304 <sup>1)</sup>   |                 |                 |                |                |                         |                    |
|                           | 305                 | 0.9             | 0.80            | 2              | 22-24-26       | DCE.91.090.AVC          | DCE.91.090.AVM     |
|                           | 304 <sup>1)</sup>   | 0.7             | 0.80            | 1              | 22-24-26       | DCE.91.070.BVC          | DCE.91.070.BVM     |
| 305                       | 0.7                 | 0.45            | 2               | 28-30-32       |                |                         |                    |
| 306/307<br>309            | 0.5                 | 0.45            | 1               | 28-30-32       | DCE.91.050.BVC | –                       |                    |
| <b>1B<br/>1K<br/>1S</b>   | 302 <sup>1)</sup>   | 1.3             | 1.40            | 1              | 18-20          | DCE.91.131.BVC          | DCE.91.131.BVM     |
|                           | 303                 |                 |                 |                |                |                         |                    |
|                           | 304 <sup>1)</sup>   | 0.9             | 1.10            | 1              | 20-22-24       | DCE.91.091.BVC          | DCE.91.091.BVM     |
|                           | 305                 |                 |                 |                |                |                         |                    |
|                           | 306/307<br>308      | 0.7             | 0.80            | 1              | 22-24-26       | DCE.91.071.BVC          | DCE.91.071.BVM     |
| 308                       | 0.7                 | 0.45            | 2               | 28-30-32       |                |                         |                    |
| 310/314<br>316            | 0.5                 | 0.45            | 1               | 28-30-32       | DCE.91.051.BVC | –                       |                    |
| <b>2B<br/>2K<br/>2S</b>   | 304/305             | 1.3             | 1.40            | 1              | 18-20          | DCE.91.132.BVC          | DCE.91.132.BVM     |
|                           | 306 <sup>1)</sup>   |                 |                 |                |                |                         |                    |
|                           | 307                 | 0.9             | 1.10            | 1              | 20-22-24       | DCE.91.132.CVC          | DCE.91.132.CVM     |
|                           | 308/310             |                 |                 |                |                |                         |                    |
|                           |                     |                 |                 |                |                |                         |                    |
|                           | 308/310             | 0.9             | 0.80            | 2              | 22-24-26       | DCE.91.092.BVC          | DCE.91.092.BVM     |
|                           |                     | 308             | 0.9             | 0.45           | 2              |                         |                    |
| 312/314<br>316/318<br>319 | 0.7                 | 0.80            | 1               | 22-24-26       | DCE.91.072.BVC | DCE.91.072.BVM          |                    |
|                           | 319                 | 0.7             | 0.45            | 2              |                |                         | 28-30-32           |

**Note:** <sup>1)</sup> only these types are available in S series.



These positioners are suitable for use with both manual and pneumatic crimping tools according to the MIL-C-22520/7-01 standard.

### DCE Positioners for crimp contacts 0.5-0.7-0.9 and 1.3 mm diameter

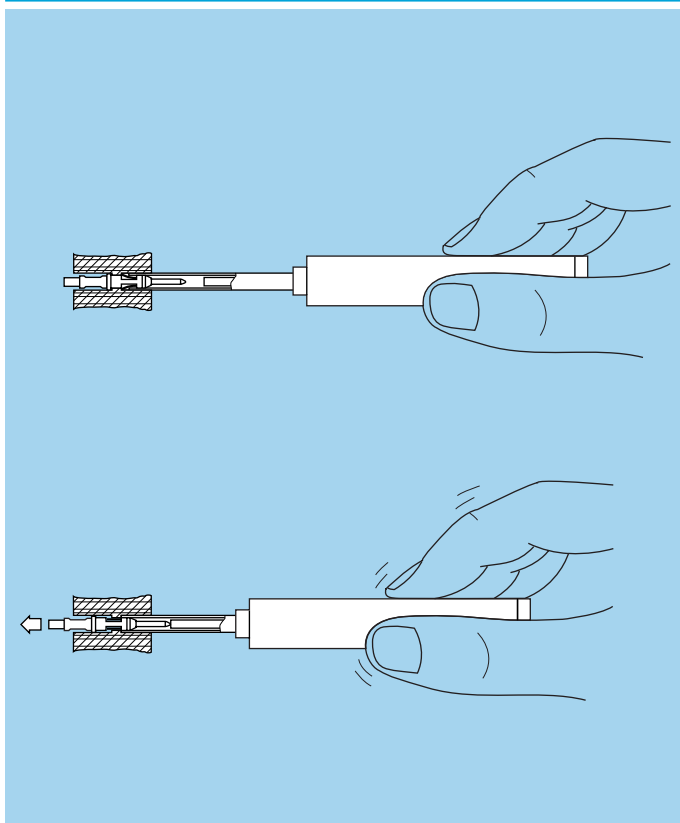
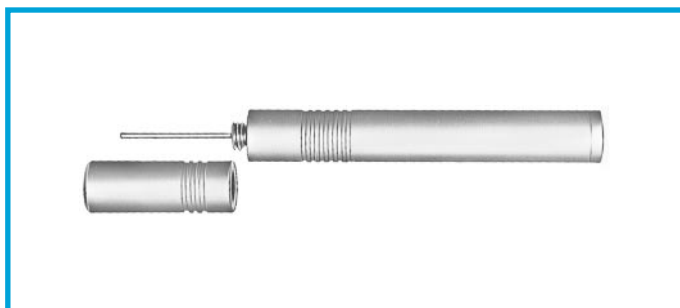
|                  | Connector + Contact |     |      |                |               | Positioners part number |                    |
|------------------|---------------------|-----|------|----------------|---------------|-------------------------|--------------------|
|                  | Type                | ∅ A | ∅ C  | L <sub>0</sub> | Conductor AWG | For male contact        | For female contact |
| <b>3B<br/>3K</b> | 308/309             | 1.3 | 1.40 | 1              | 18-20         | DCE.91.133.BVC          | DCE.91.133.BVM     |
|                  | 310                 | 1.3 | 1.10 | 2              | 20-22-24      |                         |                    |
|                  | 312/314             | 0.9 | 1.10 | 1              | 20-22-24      |                         |                    |
|                  | 316/318             | 0.9 | 0.80 | 2              | 22-24-26      |                         |                    |
| <b>4B<br/>4K</b> | 320/322             | 0.7 | 0.80 | 1              | 22-24-26      | DCE.91.073.BVC          | DCE.91.073.BVM     |
|                  |                     | 0.7 | 0.45 | 2              | 28-30-32      |                         |                    |
|                  | 324/326             | 1.3 | 1.40 | 1              | 18-20         |                         |                    |
|                  |                     | 1.3 | 1.10 | 2              | 20-22-24      |                         |                    |
|                  | 330                 | 0.9 | 1.10 | 1              | 20-22-24      |                         |                    |
|                  |                     | 0.9 | 0.80 | 2              | 22-24-26      |                         |                    |
|                  | 340/348             | 0.7 | 0.80 | 1              | 22-24-26      |                         |                    |
|                  |                     | 0.7 | 0.45 | 2              | 28-30-32      |                         |                    |
| <b>5B<br/>5K</b> | 330/340             | 1.3 | 1.40 | 1              | 18-20         | DCE.91.135.BVC          | DCE.91.135.BVM     |
|                  | 348                 | 0.9 | 1.10 | 1              | 20-22-24      |                         |                    |
|                  | 350/354             | 0.9 | 0.80 | 2              | 22-24-26      |                         |                    |
|                  | 364                 | 0.9 | 0.80 | 2              | 22-24-26      |                         |                    |



**Note:** these turrets can be used with manual crimping tool according to MIL-C-22520/1-01 standard.

### DCE Turret for crimp contacts 1.6-2.0-3.0 and 4.0 mm diameter

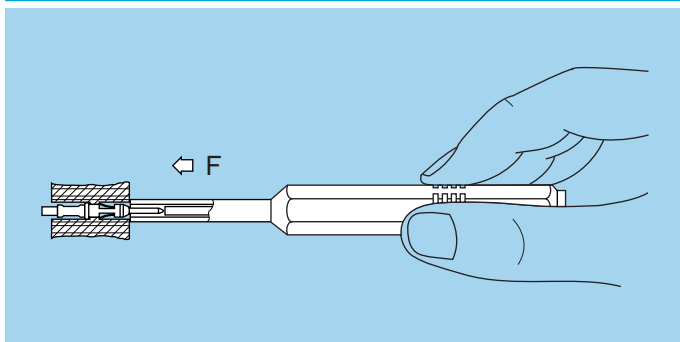
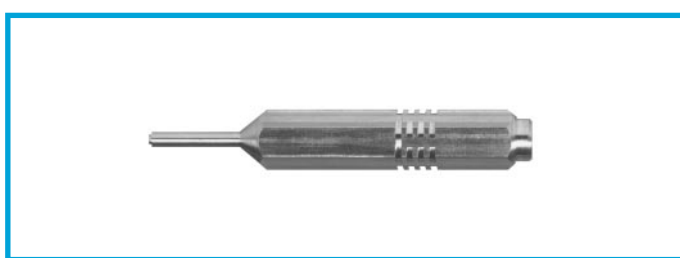
|                  | Connector + Contact |     |     |                |               | Positioners     |
|------------------|---------------------|-----|-----|----------------|---------------|-----------------|
|                  | Type                | ∅ A | ∅ C | L <sub>0</sub> | Conductor AWG | Part number     |
| <b>2B<br/>2K</b> | 302                 | 2.0 | 2.4 | 1              | 12-14-16      | DCE.91.202.BVCM |
|                  |                     | 2.0 | 1.9 | 2              | 14-16-18      |                 |
|                  | 303                 | 1.6 | 1.9 | 1              | 14-16-18      |                 |
|                  |                     | 1.6 | 1.4 | 2              | 18-20-22      |                 |
| <b>3B<br/>3K</b> | 302                 | 3.0 | 2.9 | 1              | 10-12-14      | DCE.91.303.BVCM |
|                  | 303/304             | 2.0 | 2.4 | 1              | 12-14-16      | DCE.91.203.BVCM |
|                  |                     | 2.0 | 1.9 | 2              | 14-16-18      |                 |
|                  | 305/306             | 1.6 | 1.9 | 1              | 14-16-18      | DCE.91.163.BVCM |
| 307              | 1.6                 | 1.4 | 2   | 18-20-22       |               |                 |
| <b>4B<br/>4K</b> | 304                 | 3.0 | 2.9 | 1              | 10-12-14      | DCE.91.304.BVCM |
|                  | 306/307             | 2.0 | 2.4 | 1              | 12-14-16      | DCE.91.204.BVCM |
|                  |                     | 2.0 | 1.9 | 2              | 14-16-18      |                 |
|                  | 310                 | 1.6 | 1.9 | 1              | 14-16-18      | DCE.91.164.BVCM |
| 1.6              |                     | 1.4 | 2   | 18-20-22       |               |                 |
| <b>5B<br/>5K</b> | 304                 | 4.0 | 4.0 | 1              | 10-12         | DCE.91.405.BVCM |
|                  | 310                 | 3.0 | 2.9 | 1              | 10-12-14      | DCE.91.305.BVCM |
|                  | 314/316             | 2.0 | 2.4 | 1              | 12-14-16      | DCE.91.205.BVCM |
|                  |                     | 2.0 | 1.9 | 2              | 14-16-18      |                 |
|                  | 320                 | 1.6 | 1.9 | 1              | 14-16-18      | DCE.91.165.BVCM |
|                  |                     | 1.6 | 1.4 | 2              | 18-20-22      |                 |



**Note:** this model is used for male and female contacts.

### DCF Extraction tools for crimp contacts

|                  | Connector           |                         | Extractors     |
|------------------|---------------------|-------------------------|----------------|
|                  | Type                | Contact $\varnothing$ A | Part number    |
| <b>00</b>        | 302/303/304         | 0.5                     | DCF.91.050.2LT |
| <b>0B<br/>0K</b> | 302/303             | 0.9                     | DCF.91.090.2LT |
|                  | 304/305             | 0.7                     | DCF.91.070.2LT |
|                  | 306/307/309         | 0.5                     | DCF.91.050.2LT |
| <b>1B<br/>1K</b> | 302/303             | 1.3                     | DCF.91.131.2LT |
|                  | 304/305             | 0.9                     | DCF.91.090.2LT |
|                  | 306/307/308         | 0.7                     | DCF.91.070.2LT |
|                  | 310/314/316         | 0.5                     | DCF.91.050.2LT |
| <b>2B<br/>2K</b> | 302                 | 2.0                     | DCF.91.202.2LT |
|                  | 303                 | 1.6                     | DCF.91.162.2LT |
|                  | 304/305/306/307     | 1.3                     | DCF.91.131.2LT |
|                  | 308/310             | 0.9                     | DCF.91.090.2LT |
|                  | 312/314/316/318/319 | 0.7                     | DCF.91.070.2LT |
| <b>3B<br/>3K</b> | 302                 | 3.0                     | DCF.91.303.5LT |
|                  | 303/304/309         | 2.0                     | DCF.91.203.5LT |
|                  | 305/306/307         | 1.6                     | DCF.91.163.5LT |
|                  | 308/309/310         | 1.3                     | DCF.91.133.5LT |
|                  | 312/314/316/318     | 0.9                     | DCF.91.093.5LT |
|                  | 320/322/324/326/330 | 0.7                     | DCF.91.073.5LT |
| <b>4B<br/>4K</b> | 304                 | 3.0                     | DCF.91.303.5LT |
|                  | 306/307             | 2.0                     | DCF.91.203.5LT |
|                  | 310                 | 1.6                     | DCF.91.163.5LT |
|                  | 312                 | 1.3                     | DCF.91.133.5LT |
|                  | 316/320/324/330     | 0.9                     | DCF.91.093.5LT |
|                  | 340/348             | 0.7                     | DCF.91.073.5LT |
| <b>5B<br/>5K</b> | 304                 | 4.0                     | DCF.91.405.5LT |
|                  | 310                 | 3.0                     | DCF.91.303.5LT |
|                  | 314/316             | 2.0                     | DCF.91.203.5LT |
|                  | 320                 | 1.6                     | DCF.91.163.5LT |
|                  | 330/340/348         | 1.3                     | DCF.91.133.5LT |
|                  | 350/354/364         | 0.9                     | DCF.91.093.5LT |



### DCK Retention testing tools for crimp contacts 0.5-0.7-0.9 and 1.3 mm diameter

| Contact $\varnothing$ A | Test force (N) | Testing tool part number |                    |
|-------------------------|----------------|--------------------------|--------------------|
|                         |                | For male contact         | For female contact |
| 0.5                     | 8              | DCK.91.050.8LRC          | DCK.91.050.8LRM    |
| 0.7                     | 14             | DCK.91.071.4LRC          | DCK.91.071.4LRM    |
| 0.9                     | 14             | DCK.91.091.4LRC          | DCK.91.091.4LRM    |
| 1.3                     | 25             | DCK.91.132.5LRC          | DCK.91.132.5LRM    |