

|    |    |                                  |    |      |                               |
|----|----|----------------------------------|----|------|-------------------------------|
| D  | mm | Wire diameter                    | L1 | mm   | Prestressed spring length     |
| D  | mm | Mean coil diameter               | L2 | mm   | Loaded spring length          |
| De | mm | Outer coil diameter              | Ln | mm   | Maximum spring length         |
| Dh | mm | Minimum diameter of bush         | m  | mm   | Loop opening width            |
| F0 | N  | Initial tension                  | n  | pc.  | Number of active coils        |
| F1 | N  | Prestressed spring force         | nt | pc.  | Total number of coils         |
| F2 | N  | Loaded spring force              | s1 | mm   | Prestressed spring deflection |
| Fn | N  | Maximum spring force             | s2 | mm   | Loaded spring deflection      |
| Lh | mm | Loop height                      | sn | mm   | Maximum spring deflection     |
| Lk | mm | Length of unstressed spring body | sh | mm   | Excursion                     |
| L0 | mm | Unstressed spring length         | R  | N/mm | Spring rate                   |

| Symbol | Unit | Description                      | Value  |
|--------|------|----------------------------------|--------|
| Lh     | mm   | Loop height                      | 8,500  |
| Lk     | mm   | Length of unstressed spring body | 157,00 |
| L0     | mm   | Unstressed spring length         | 174,00 |
| sn     | mm   | Maximum spring deflection        | 151,12 |
| sh     | mm   | Excursion                        |        |
| R      | N/mm | Spring rate                      |        |

The technical drawing shows a spring with a hook and a body. Key dimensions include:
 

- Lh**: Loop height = 8,500
- Lk**: Length of unstressed spring body = 157,00
- L0**: Unstressed spring length = 174,00
- sn**: Maximum spring deflection = 151,12
- sh**: Excursion
- R**: Spring rate

 The drawing also includes a load-deflection graph on the right, showing the relationship between force (F) and deflection (s). The graph starts at F0 and ends at Fn, with intermediate points F1 and F2. The deflection values are s1 and s2. The spring is shown in a coiled state with a hook and a loop. The hook has a diameter of 17,80 and a height of 17,80. The loop has a diameter of 14,50 and a height of 14,50. The spring is shown in a coiled state with a hook and a loop. The hook has a diameter of 17,80 and a height of 17,80. The loop has a diameter of 14,50 and a height of 14,50.

Spring test acc. to DIN ISO 2859/1 test level II

| <b>1 Coiling direction</b><br><input type="checkbox"/> left <input checked="" type="checkbox"/> right                                                                                                                                                                                                                                                                                                                                                                                                     | <b>4 Stress cyc. end. N</b> <input style="width: 100%;" type="text"/>                                                                        | <b>10 Tolerances to DIN 2097</b><br><table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>Grade</th> <th>De, Di, D</th> <th>L0</th> <th>F0-Fn</th> <th>Loops</th> <th rowspan="4">Wire diameter d to DIN 2076</th> </tr> <tr> <td>1</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>2</td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>3</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table> |                                     | Grade                                                          | De, Di, D                                 | L0                                                             | F0-Fn                             | Loops                          | Wire diameter d to DIN 2076                                   | 1                                 | <input type="checkbox"/>       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 2        | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | 3   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |          |     |          |     |          |
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| Grade                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | De, Di, D                                                                                                                                    | L0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | F0-Fn                               | Loops                                                          | Wire diameter d to DIN 2076               |                                                                |                                   |                                |                                                               |                                   |                                |                          |                          |                          |          |                                     |                                     |                                     |                                     |     |                          |                          |                          |                          |          |     |          |     |          |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <input type="checkbox"/>                                                                                                                     | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <input type="checkbox"/>            | <input type="checkbox"/>                                       |                                           |                                                                |                                   |                                |                                                               |                                   |                                |                          |                          |                          |          |                                     |                                     |                                     |                                     |     |                          |                          |                          |                          |          |     |          |     |          |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <input checked="" type="checkbox"/>                                                                                                          | <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/>                            |                                           |                                                                |                                   |                                |                                                               |                                   |                                |                          |                          |                          |          |                                     |                                     |                                     |                                     |     |                          |                          |                          |                          |          |     |          |     |          |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <input type="checkbox"/>                                                                                                                     | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <input type="checkbox"/>            | <input type="checkbox"/>                                       |                                           |                                                                |                                   |                                |                                                               |                                   |                                |                          |                          |                          |          |                                     |                                     |                                     |                                     |     |                          |                          |                          |                          |          |     |          |     |          |
| <b>2 Loop shape and loop position</b><br>Loop shape<br><div style="border: 1px solid black; padding: 5px; margin: 5px 0;">1/1 German loop</div> <div style="display: flex; align-items: center;"> <div style="flex: 1;">           Loops offset to one another by <div style="display: inline-block; border: 1px solid black; padding: 2px 10px; text-align: center;">180,0 + 49,0</div> degrees         </div> <div style="flex: 1; text-align: center;"> </div> </div> (in the dir. of the right helix) | <b>5 Stress cycle frequ. n</b> <input style="width: 100%;" type="text"/> /                                                                   | <b>11 Production compensation through</b><br><table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">A spring resistance, associated length of tensed spring and L0</td> <td style="width: 20%;">F0, D <input checked="" type="checkbox"/></td> </tr> <tr> <td rowspan="2">A spring resistance, associated length of tensed spring and F0</td> <td>L0, n, d <input type="checkbox"/></td> </tr> <tr> <td>L0, D <input type="checkbox"/></td> </tr> <tr> <td rowspan="2">Two spring resistances and associated length of tensed spring</td> <td>L0, n, d <input type="checkbox"/></td> </tr> <tr> <td>F0, D <input type="checkbox"/></td> </tr> </table>                                                                                               |                                     | A spring resistance, associated length of tensed spring and L0 | F0, D <input checked="" type="checkbox"/> | A spring resistance, associated length of tensed spring and F0 | L0, n, d <input type="checkbox"/> | L0, D <input type="checkbox"/> | Two spring resistances and associated length of tensed spring | L0, n, d <input type="checkbox"/> | F0, D <input type="checkbox"/> |                          |                          |                          |          |                                     |                                     |                                     |                                     |     |                          |                          |                          |                          |          |     |          |     |          |
| A spring resistance, associated length of tensed spring and L0                                                                                                                                                                                                                                                                                                                                                                                                                                            | F0, D <input checked="" type="checkbox"/>                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                     |                                                                |                                           |                                                                |                                   |                                |                                                               |                                   |                                |                          |                          |                          |          |                                     |                                     |                                     |                                     |     |                          |                          |                          |                          |          |     |          |     |          |
| A spring resistance, associated length of tensed spring and F0                                                                                                                                                                                                                                                                                                                                                                                                                                            | L0, n, d <input type="checkbox"/>                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                     |                                                                |                                           |                                                                |                                   |                                |                                                               |                                   |                                |                          |                          |                          |          |                                     |                                     |                                     |                                     |     |                          |                          |                          |                          |          |     |          |     |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | L0, D <input type="checkbox"/>                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                     |                                                                |                                           |                                                                |                                   |                                |                                                               |                                   |                                |                          |                          |                          |          |                                     |                                     |                                     |                                     |     |                          |                          |                          |                          |          |     |          |     |          |
| Two spring resistances and associated length of tensed spring                                                                                                                                                                                                                                                                                                                                                                                                                                             | L0, n, d <input type="checkbox"/>                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                     |                                                                |                                           |                                                                |                                   |                                |                                                               |                                   |                                |                          |                          |                          |          |                                     |                                     |                                     |                                     |     |                          |                          |                          |                          |          |     |          |     |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | F0, D <input type="checkbox"/>                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                     |                                                                |                                           |                                                                |                                   |                                |                                                               |                                   |                                |                          |                          |                          |          |                                     |                                     |                                     |                                     |     |                          |                          |                          |                          |          |     |          |     |          |
| <b>3 Excursion sh</b> <input style="width: 100%;" type="text"/> mm                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>6 Application temp.</b> <input style="width: 100%;" type="text"/> °C                                                                      | <b>Prices</b><br><br><table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Quantità progressiva</th> <th style="text-align: left;">Prezzo singolo [EUR]</th> </tr> <tr><td>1</td><td>7,1700 €</td></tr> <tr><td>2</td><td>4,5200 €</td></tr> <tr><td>3</td><td>3,5600 €</td></tr> <tr><td>7</td><td>3,0400 €</td></tr> <tr><td>17</td><td>1,6000 €</td></tr> <tr><td>37</td><td>1,2900 €</td></tr> <tr><td>75</td><td>1,1600 €</td></tr> <tr><td>125</td><td>1,1600 €</td></tr> <tr><td>175</td><td>1,1600 €</td></tr> <tr><td>250</td><td>1,1600 €</td></tr> <tr><td>350</td><td>1,1600 €</td></tr> <tr><td>450</td><td>1,1600 €</td></tr> </table>                                                                                                     |                                     | Quantità progressiva                                           | Prezzo singolo [EUR]                      | 1                                                              | 7,1700 €                          | 2                              | 4,5200 €                                                      | 3                                 | 3,5600 €                       | 7                        | 3,0400 €                 | 17                       | 1,6000 € | 37                                  | 1,2900 €                            | 75                                  | 1,1600 €                            | 125 | 1,1600 €                 | 175                      | 1,1600 €                 | 250                      | 1,1600 € | 350 | 1,1600 € | 450 | 1,1600 € |
| Quantità progressiva                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Prezzo singolo [EUR]                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                     |                                                                |                                           |                                                                |                                   |                                |                                                               |                                   |                                |                          |                          |                          |          |                                     |                                     |                                     |                                     |     |                          |                          |                          |                          |          |     |          |     |          |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 7,1700 €                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                     |                                                                |                                           |                                                                |                                   |                                |                                                               |                                   |                                |                          |                          |                          |          |                                     |                                     |                                     |                                     |     |                          |                          |                          |                          |          |     |          |     |          |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 4,5200 €                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                     |                                                                |                                           |                                                                |                                   |                                |                                                               |                                   |                                |                          |                          |                          |          |                                     |                                     |                                     |                                     |     |                          |                          |                          |                          |          |     |          |     |          |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 3,5600 €                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                     |                                                                |                                           |                                                                |                                   |                                |                                                               |                                   |                                |                          |                          |                          |          |                                     |                                     |                                     |                                     |     |                          |                          |                          |                          |          |     |          |     |          |
| 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 3,0400 €                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                     |                                                                |                                           |                                                                |                                   |                                |                                                               |                                   |                                |                          |                          |                          |          |                                     |                                     |                                     |                                     |     |                          |                          |                          |                          |          |     |          |     |          |
| 17                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1,6000 €                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                     |                                                                |                                           |                                                                |                                   |                                |                                                               |                                   |                                |                          |                          |                          |          |                                     |                                     |                                     |                                     |     |                          |                          |                          |                          |          |     |          |     |          |
| 37                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1,2900 €                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                     |                                                                |                                           |                                                                |                                   |                                |                                                               |                                   |                                |                          |                          |                          |          |                                     |                                     |                                     |                                     |     |                          |                          |                          |                          |          |     |          |     |          |
| 75                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1,1600 €                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                     |                                                                |                                           |                                                                |                                   |                                |                                                               |                                   |                                |                          |                          |                          |          |                                     |                                     |                                     |                                     |     |                          |                          |                          |                          |          |     |          |     |          |
| 125                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1,1600 €                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                     |                                                                |                                           |                                                                |                                   |                                |                                                               |                                   |                                |                          |                          |                          |          |                                     |                                     |                                     |                                     |     |                          |                          |                          |                          |          |     |          |     |          |
| 175                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1,1600 €                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                     |                                                                |                                           |                                                                |                                   |                                |                                                               |                                   |                                |                          |                          |                          |          |                                     |                                     |                                     |                                     |     |                          |                          |                          |                          |          |     |          |     |          |
| 250                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1,1600 €                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                     |                                                                |                                           |                                                                |                                   |                                |                                                               |                                   |                                |                          |                          |                          |          |                                     |                                     |                                     |                                     |     |                          |                          |                          |                          |          |     |          |     |          |
| 350                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1,1600 €                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                     |                                                                |                                           |                                                                |                                   |                                |                                                               |                                   |                                |                          |                          |                          |          |                                     |                                     |                                     |                                     |     |                          |                          |                          |                          |          |     |          |     |          |
| 450                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1,1600 €                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                     |                                                                |                                           |                                                                |                                   |                                |                                                               |                                   |                                |                          |                          |                          |          |                                     |                                     |                                     |                                     |     |                          |                          |                          |                          |          |     |          |     |          |
| <b>7 Material</b><br><input style="width: 100%;" type="text"/> 1.4310                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>8 Wire or rod surface</b><br><input checked="" type="checkbox"/> drawn <input type="checkbox"/> rolled <input type="checkbox"/> metal-cut |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                     |                                                                |                                           |                                                                |                                   |                                |                                                               |                                   |                                |                          |                          |                          |          |                                     |                                     |                                     |                                     |     |                          |                          |                          |                          |          |     |          |     |          |
| <b>9 Surface treatment</b><br><input style="width: 100%;" type="text"/>                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>Remarks</b><br><br>Paese d'origine: DE   Numero della tariffa doganale: 73202085                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                     |                                                                |                                           |                                                                |                                   |                                |                                                               |                                   |                                |                          |                          |                          |          |                                     |                                     |                                     |                                     |     |                          |                          |                          |                          |          |     |          |     |          |