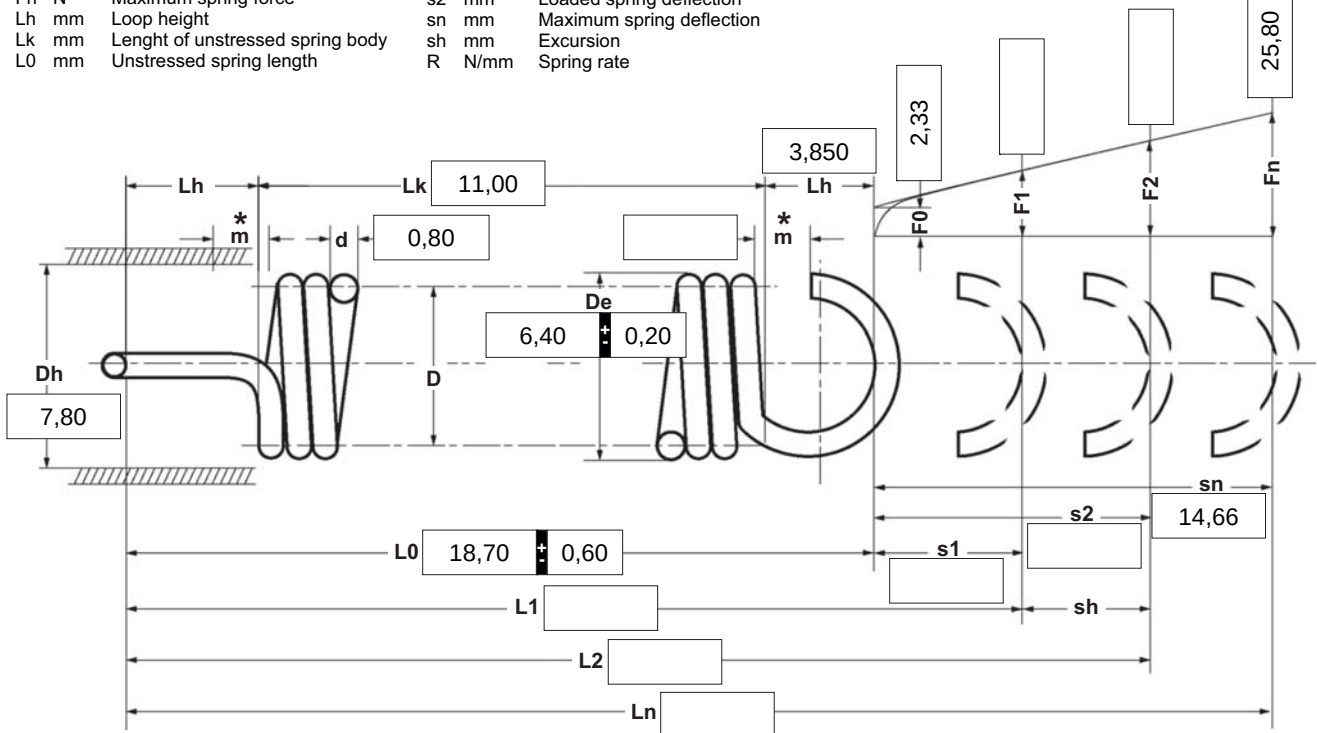


|    |    |                                  |    |      |                               |
|----|----|----------------------------------|----|------|-------------------------------|
| D  | mm | Wire diameter                    | L1 | mm   | Prestressed spring length     |
| D  | mm | Mean coil diameter               | 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                   |

Weight g      Weight of one spring

07.2025

- \* Loops are stocked without openings ( $m = 0,00$ ). However it is possible to have an opening cut into the loop at an extra cost, without causing any delay.



|   |    |   |       |        |       |
|---|----|---|-------|--------|-------|
| n | nt | R | 1,601 | Weight | 1,014 |
|---|----|---|-------|--------|-------|

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; text-align: center;"> <thead> <tr> <th>Grade</th> <th>De, Di, D</th> <th>L0</th> <th>F0-Fn</th> <th>Loops</th> <th>Wire diameter d to DIN 2076</th> </tr> </thead> <tbody> <tr> <td>1</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td></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> <td></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> <td><input checked="" type="checkbox"/></td> </tr> </tbody> </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"/> | <input checked="" type="checkbox"/> |     |          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|-------------------------------------|-------------------------------------|----------------------------------------------------------------|----------|-----------------------------|-------|--------------------------|---------------------------------------------------------------|--------------------------|--------------------------|----------|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|----------|-----|--------------------------|--------------------------|--------------------------|--------------------------|-------------------------------------|-----|----------|
| 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"/>            | <input checked="" 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> Loops offset to one another<br>by <div style="display: inline-block; border: 1px solid black; padding: 2px 10px; text-align: center;">270,0</div> <div style="display: inline-block; border: 1px solid black; padding: 2px 5px; text-align: center;">+</div> <div style="display: inline-block; border: 1px solid black; padding: 2px 10px; text-align: center;">18,0</div> degrees <div style="margin-top: 5px;">(in the dir. of the right helix)</div> | <b>5 Stress cycle frequ. n</b> <input style="width: 100%;" type="text"/> / <input style="width: 100%;" type="text"/> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                |                                     |                                     |                                                                |          |                             |       |                          |                                                               |                          |                          |          |                          |                                     |                                     |                                     |                                     |          |     |                          |                          |                          |                          |                                     |     |          |
| <b>6 Application temp.</b> <input style="width: 100%;" type="text"/> °C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>7 Material</b><br><div style="border: 1px solid black; padding: 5px; margin: 5px 0;">1.4310</div>                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                |                                     |                                     |                                                                |          |                             |       |                          |                                                               |                          |                          |          |                          |                                     |                                     |                                     |                                     |          |     |                          |                          |                          |                          |                                     |     |          |
| <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><div style="border: 1px solid black; height: 40px; margin: 5px 0;"></div>              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                |                                     |                                     |                                                                |          |                             |       |                          |                                                               |                          |                          |          |                          |                                     |                                     |                                     |                                     |          |     |                          |                          |                          |                          |                                     |     |          |
| <b>3 Excursion sh</b> <input style="width: 100%;" type="text"/> mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                      | <b>11 Production compensation through</b><br><table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tbody> <tr> <td style="width: 80%;">A spring resistance, associated length of tensed spring and L0</td> <td>F0, D</td> <td><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</td> <td><input type="checkbox"/></td> </tr> <tr> <td>L0, D</td> <td><input type="checkbox"/></td> </tr> <tr> <td rowspan="2">Two spring resistances and associated length of tensed spring</td> <td>L0, n, d</td> <td><input type="checkbox"/></td> </tr> <tr> <td>F0, D</td> <td><input type="checkbox"/></td> </tr> </tbody> </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>Remarks</b><br><br>Paese d'origine: DE   Numero della tariffa doganale: 73202085                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                      | <b>Prices</b><br><br><table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Quantità progressiva</th> <th style="text-align: left;">Prezzo singolo [EUR]</th> </tr> </thead> <tbody> <tr><td>1</td><td>6,2300 €</td></tr> <tr><td>2</td><td>3,9200 €</td></tr> <tr><td>3</td><td>2,5300 €</td></tr> <tr><td>7</td><td>2,1100 €</td></tr> <tr><td>17</td><td>1,0500 €</td></tr> <tr><td>37</td><td>0,6800 €</td></tr> <tr><td>75</td><td>0,5300 €</td></tr> <tr><td>125</td><td>0,4970 €</td></tr> <tr><td>175</td><td>0,4834 €</td></tr> <tr><td>250</td><td>0,4713 €</td></tr> <tr><td>350</td><td>0,4452 €</td></tr> <tr><td>450</td><td>0,4355 €</td></tr> </tbody> </table>                                                                                                                                                                              | Quantità progressiva                                           | Prezzo singolo [EUR]                | 1                                   | 6,2300 €                                                       | 2        | 3,9200 €                    | 3     | 2,5300 €                 | 7                                                             | 2,1100 €                 | 17                       | 1,0500 € | 37                       | 0,6800 €                            | 75                                  | 0,5300 €                            | 125                                 | 0,4970 € | 175 | 0,4834 €                 | 250                      | 0,4713 €                 | 350                      | 0,4452 €                            | 450 | 0,4355 € |
| Quantità progressiva                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Prezzo singolo [EUR]                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                |                                     |                                     |                                                                |          |                             |       |                          |                                                               |                          |                          |          |                          |                                     |                                     |                                     |                                     |          |     |                          |                          |                          |                          |                                     |     |          |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 6,2300 €                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                |                                     |                                     |                                                                |          |                             |       |                          |                                                               |                          |                          |          |                          |                                     |                                     |                                     |                                     |          |     |                          |                          |                          |                          |                                     |     |          |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 3,9200 €                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                |                                     |                                     |                                                                |          |                             |       |                          |                                                               |                          |                          |          |                          |                                     |                                     |                                     |                                     |          |     |                          |                          |                          |                          |                                     |     |          |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 2,5300 €                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                |                                     |                                     |                                                                |          |                             |       |                          |                                                               |                          |                          |          |                          |                                     |                                     |                                     |                                     |          |     |                          |                          |                          |                          |                                     |     |          |
| 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 2,1100 €                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                |                                     |                                     |                                                                |          |                             |       |                          |                                                               |                          |                          |          |                          |                                     |                                     |                                     |                                     |          |     |                          |                          |                          |                          |                                     |     |          |
| 17                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1,0500 €                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                |                                     |                                     |                                                                |          |                             |       |                          |                                                               |                          |                          |          |                          |                                     |                                     |                                     |                                     |          |     |                          |                          |                          |                          |                                     |     |          |
| 37                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0,6800 €                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                |                                     |                                     |                                                                |          |                             |       |                          |                                                               |                          |                          |          |                          |                                     |                                     |                                     |                                     |          |     |                          |                          |                          |                          |                                     |     |          |
| 75                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0,5300 €                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                |                                     |                                     |                                                                |          |                             |       |                          |                                                               |                          |                          |          |                          |                                     |                                     |                                     |                                     |          |     |                          |                          |                          |                          |                                     |     |          |
| 125                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0,4970 €                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                |                                     |                                     |                                                                |          |                             |       |                          |                                                               |                          |                          |          |                          |                                     |                                     |                                     |                                     |          |     |                          |                          |                          |                          |                                     |     |          |
| 175                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0,4834 €                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                |                                     |                                     |                                                                |          |                             |       |                          |                                                               |                          |                          |          |                          |                                     |                                     |                                     |                                     |          |     |                          |                          |                          |                          |                                     |     |          |
| 250                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0,4713 €                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                |                                     |                                     |                                                                |          |                             |       |                          |                                                               |                          |                          |          |                          |                                     |                                     |                                     |                                     |          |     |                          |                          |                          |                          |                                     |     |          |
| 350                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0,4452 €                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                |                                     |                                     |                                                                |          |                             |       |                          |                                                               |                          |                          |          |                          |                                     |                                     |                                     |                                     |          |     |                          |                          |                          |                          |                                     |     |          |
| 450                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0,4355 €                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                |                                     |                                     |                                                                |          |                             |       |                          |                                                               |                          |                          |          |                          |                                     |                                     |                                     |                                     |          |     |                          |                          |                          |                          |                                     |     |          |