

| Form 1. Federenden angelegt<br>⊗ und geschliffen                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                      |                  | Form 2. Federenden<br>○ angelegt |  | Form 3. Federenden<br>○ angelegt, geschmiedet<br>und geschliffen                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                                                                      |    |   |                                                                          |         |        |   |              |   |                                                                         |             |   |   |                  |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |   |  |  |  |  |
|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|------------------|----------------------------------|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------|----|---|--------------------------------------------------------------------------|---------|--------|---|--------------|---|-------------------------------------------------------------------------|-------------|---|---|------------------|---|----|---|---|---|---|----|---|---|---|---|----|---|---|---|---|----|---|---|---|---|---|--|--|--|--|
| 1                                                                        | Anzahl der federnden Windungen<br>Gesamtanzahl der Windungen                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | n = 12.5<br>nt = 14.5                                                |                  |                                  |  | <div style="display: flex; justify-content: space-between;"> <span>Zulässige Abweichungen<br/>nach EN 15800</span> <span>DIN<br/>2096</span> </div> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="width: 15%;"></th> <th style="width: 15%;">1</th> <th style="width: 15%;">2</th> <th style="width: 15%;">3</th> <th style="width: 15%;"></th> </tr> </thead> <tbody> <tr><td>De, Di</td><td>○</td><td>⊗</td><td>○</td><td>○</td></tr> <tr><td>L0</td><td>○</td><td>⊗</td><td>○</td><td>○</td></tr> <tr><td>F1</td><td>○</td><td>⊗</td><td>○</td><td>○</td></tr> <tr><td>F2</td><td>○</td><td>○</td><td>○</td><td>○</td></tr> <tr><td>e1</td><td>○</td><td>⊗</td><td>○</td><td>○</td></tr> <tr><td>e2</td><td>○</td><td>⊗</td><td>○</td><td>○</td></tr> <tr><td>d</td><td></td><td></td><td></td><td></td></tr> </tbody> </table> |  |                                                                      | 1  | 2 | 3                                                                        |         | De, Di | ○ | ⊗            | ○ | ○                                                                       | L0          | ○ | ⊗ | ○                | ○ | F1 | ○ | ⊗ | ○ | ○ | F2 | ○ | ○ | ○ | ○ | e1 | ○ | ⊗ | ○ | ○ | e2 | ○ | ⊗ | ○ | ○ | d |  |  |  |  |
|                                                                          | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 2                                                                    | 3                |                                  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                                                      |    |   |                                                                          |         |        |   |              |   |                                                                         |             |   |   |                  |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |   |  |  |  |  |
| De, Di                                                                   | ○                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ⊗                                                                    | ○                | ○                                |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                                                      |    |   |                                                                          |         |        |   |              |   |                                                                         |             |   |   |                  |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |   |  |  |  |  |
| L0                                                                       | ○                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ⊗                                                                    | ○                | ○                                |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                                                      |    |   |                                                                          |         |        |   |              |   |                                                                         |             |   |   |                  |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |   |  |  |  |  |
| F1                                                                       | ○                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ⊗                                                                    | ○                | ○                                |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                                                      |    |   |                                                                          |         |        |   |              |   |                                                                         |             |   |   |                  |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |   |  |  |  |  |
| F2                                                                       | ○                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ○                                                                    | ○                | ○                                |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                                                      |    |   |                                                                          |         |        |   |              |   |                                                                         |             |   |   |                  |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |   |  |  |  |  |
| e1                                                                       | ○                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ⊗                                                                    | ○                | ○                                |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                                                      |    |   |                                                                          |         |        |   |              |   |                                                                         |             |   |   |                  |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |   |  |  |  |  |
| e2                                                                       | ○                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ⊗                                                                    | ○                | ○                                |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                                                      |    |   |                                                                          |         |        |   |              |   |                                                                         |             |   |   |                  |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |   |  |  |  |  |
| d                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                      |                  |                                  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                                                      |    |   |                                                                          |         |        |   |              |   |                                                                         |             |   |   |                  |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |   |  |  |  |  |
| 2                                                                        | Windungsrichtung                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | rechts<br>links                                                      | ⊗<br>○           |                                  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                                                      |    |   |                                                                          |         |        |   |              |   |                                                                         |             |   |   |                  |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |   |  |  |  |  |
| 3                                                                        | Entgraten der Federenden                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | nicht<br>innen<br>aussen                                             | ⊗<br>○<br>○      |                                  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                                                      |    |   |                                                                          |         |        |   |              |   |                                                                         |             |   |   |                  |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |   |  |  |  |  |
| 4                                                                        | Arbeitsweg (Hub)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                      |                  |                                  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                                                      |    |   |                                                                          |         |        |   |              |   |                                                                         |             |   |   |                  |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |   |  |  |  |  |
| 5                                                                        | Lastspielfrequenz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                      |                  |                                  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                                                      |    |   |                                                                          |         |        |   |              |   |                                                                         |             |   |   |                  |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |   |  |  |  |  |
| 6                                                                        | Arbeitstemperaturbereich von 0 bis 80 °C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                      |                  |                                  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                                                      |    |   |                                                                          |         |        |   |              |   |                                                                         |             |   |   |                  |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |   |  |  |  |  |
| 7                                                                        | Draht- oder<br>Staboberfläche                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | gezogen<br>gewalzt<br>spitzenlos geschliffen<br>Feder kugelgestrahlt | ⊗<br>○<br>○<br>○ |                                  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                                                      |    |   |                                                                          |         |        |   |              |   |                                                                         |             |   |   |                  |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |   |  |  |  |  |
| 8                                                                        | Oberflächenschutz :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                      |                  |                                  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                                                      |    |   |                                                                          |         |        |   |              |   |                                                                         |             |   |   |                  |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |   |  |  |  |  |
| 9                                                                        | Werkstoff: SH/DH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                      |                  |                                  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                                                      |    |   |                                                                          |         |        |   |              |   |                                                                         |             |   |   |                  |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |   |  |  |  |  |
| 10                                                                       | <div style="display: flex; justify-content: space-between;"> <span>Fertigungsausgleich</span> <span>durch:</span> </div> <table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td style="width: 80%; padding: 5px;">a) wenn eine Federkraft und die zugehörige Länge vorgeschrieben sind</td> <td style="width: 10%; padding: 5px;">L0</td> <td style="width: 10%; text-align: center; padding: 5px;">○</td> </tr> <tr> <td style="padding: 5px;">b) wenn eine Federkraft, die zugehörige Länge und L0 vorgeschrieben sind</td> <td style="padding: 5px;">n und d</td> <td style="text-align: center; padding: 5px;">⊗</td> </tr> <tr> <td></td> <td style="padding: 5px;">n und De, Di</td> <td style="text-align: center; padding: 5px;">○</td> </tr> <tr> <td style="padding: 5px;">c) wenn zwei Federkräfte und die zugehörigen Längen vorgeschrieben sind</td> <td style="padding: 5px;">L0, n und d</td> <td style="text-align: center; padding: 5px;">○</td> </tr> <tr> <td></td> <td style="padding: 5px;">L0, n und De, Di</td> <td style="text-align: center; padding: 5px;">○</td> </tr> </tbody> </table> |                                                                      |                  |                                  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  | a) wenn eine Federkraft und die zugehörige Länge vorgeschrieben sind | L0 | ○ | b) wenn eine Federkraft, die zugehörige Länge und L0 vorgeschrieben sind | n und d | ⊗      |   | n und De, Di | ○ | c) wenn zwei Federkräfte und die zugehörigen Längen vorgeschrieben sind | L0, n und d | ○ |   | L0, n und De, Di | ○ |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |   |  |  |  |  |
| a) wenn eine Federkraft und die zugehörige Länge vorgeschrieben sind     | L0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | ○                                                                    |                  |                                  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                                                      |    |   |                                                                          |         |        |   |              |   |                                                                         |             |   |   |                  |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |   |  |  |  |  |
| b) wenn eine Federkraft, die zugehörige Länge und L0 vorgeschrieben sind | n und d                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ⊗                                                                    |                  |                                  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                                                      |    |   |                                                                          |         |        |   |              |   |                                                                         |             |   |   |                  |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |   |  |  |  |  |
|                                                                          | n und De, Di                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | ○                                                                    |                  |                                  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                                                      |    |   |                                                                          |         |        |   |              |   |                                                                         |             |   |   |                  |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |   |  |  |  |  |
| c) wenn zwei Federkräfte und die zugehörigen Längen vorgeschrieben sind  | L0, n und d                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | ○                                                                    |                  |                                  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                                                      |    |   |                                                                          |         |        |   |              |   |                                                                         |             |   |   |                  |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |   |  |  |  |  |
|                                                                          | L0, n und De, Di                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ○                                                                    |                  |                                  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                                                      |    |   |                                                                          |         |        |   |              |   |                                                                         |             |   |   |                  |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |   |  |  |  |  |
| 11                                                                       | <div style="display: flex; justify-content: space-between;"> <span>Prüffedern setzen !</span> <span>Ungesetzt zu liefernde<br/>Federn dürfen länger<br/>sein als L0</span> </div> <div style="display: flex; justify-content: space-between; align-items: center;"> <span>übrige Federn gesetzt</span> <span>○</span> </div> <div style="display: flex; justify-content: space-between; align-items: center;"> <span>ungesetzt</span> <span>○ liefern</span> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                      |                  |                                  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                                                      |    |   |                                                                          |         |        |   |              |   |                                                                         |             |   |   |                  |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |    |   |   |   |   |   |  |  |  |  |
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|       |          |       |      |                    | Datum                                                                               | Name | Druckfeder |         |  |
|       |          |       |      | Bearb.             |                                                                                     |      |            |         |  |
|       |          |       |      | Gepr.              |                                                                                     |      |            |         |  |
|       |          |       |      | Norm               |                                                                                     |      |            |         |  |
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|       |          |       |      |                    |                                                                                     |      |            |         |  |
| Zust. | Änderung | Datum | Name | ZILLER Böhmenkirch |                                                                                     |      |            |         |  |