

| 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           | n = 29.5                                                             |                  | <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: left; padding: 5px;">Zulässige Abweichungen<br/>nach EN 15800<br/>Gütegrad</th> <th style="width: 10%; text-align: center; padding: 5px;">DIN<br/>2096</th> </tr> <tr> <th style="width: 30%;"></th> <th style="width: 30%; text-align: center;">1</th> <th style="width: 30%; text-align: center;">2</th> <th style="width: 30%; text-align: center;">3</th> </tr> </thead> <tbody> <tr><td>De, Di</td><td style="text-align: center;">○</td><td style="text-align: center;">⊗</td><td style="text-align: center;">○</td></tr> <tr><td>L0</td><td style="text-align: center;">○</td><td style="text-align: center;">⊗</td><td style="text-align: center;">○</td></tr> <tr><td>F1</td><td style="text-align: center;">○</td><td style="text-align: center;">⊗</td><td style="text-align: center;">○</td></tr> <tr><td>F2</td><td style="text-align: center;">○</td><td style="text-align: center;">○</td><td style="text-align: center;">○</td></tr> <tr><td>e1</td><td style="text-align: center;">○</td><td style="text-align: center;">⊗</td><td style="text-align: center;">○</td></tr> <tr><td>e2</td><td style="text-align: center;">○</td><td style="text-align: center;">⊗</td><td style="text-align: center;">○</td></tr> <tr><td>d</td><td></td><td></td><td></td></tr> </tbody> </table> </div> <div style="width: 45%;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: left; padding: 5px;">Fertigungsausgleich</th> <th style="width: 10%; text-align: center; padding: 5px;">durch:</th> </tr> </thead> <tbody> <tr> <td style="width: 80%;">a) wenn eine Federkraft und die zugehörige Länge vorgeschrieben sind</td> <td style="width: 10%; text-align: center;">L0</td> <td style="width: 10%; text-align: center;">○</td> </tr> <tr> <td rowspan="2">b) wenn eine Federkraft, die zugehörige Länge und L0 vorgeschrieben sind</td> <td>n und d</td> <td style="text-align: center;">⊗</td> </tr> <tr> <td>n und De, Di</td> <td style="text-align: center;">○</td> </tr> <tr> <td rowspan="2">c) wenn zwei Federkräfte und die zugehörigen Längen vorgeschrieben sind</td> <td>L0, n und d</td> <td style="text-align: center;">○</td> </tr> <tr> <td>L0, n und De, Di</td> <td style="text-align: center;">○</td> </tr> </tbody> </table> </div> </div> |  |                                                                  |  | Zulässige Abweichungen<br>nach EN 15800<br>Gütegrad |  | DIN<br>2096 |  | 1 | 2 | 3 | De, Di | ○ | ⊗ | ○ | L0 | ○ | ⊗ | ○ | F1 | ○ | ⊗ | ○ | F2 | ○ | ○ | ○ | e1 | ○ | ⊗ | ○ | e2 | ○ | ⊗ | ○ | d |  |  |  | Fertigungsausgleich |  | durch: | 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 | ○ |
| Zulässige Abweichungen<br>nach EN 15800<br>Gütegrad                      |                                          | DIN<br>2096                                                          |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |                                                                  |  |                                                     |  |             |  |   |   |   |        |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |   |  |  |  |                     |  |        |                                                                      |    |   |                                                                          |         |   |              |   |                                                                         |             |   |                  |   |
|                                                                          | 1                                        | 2                                                                    | 3                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |                                                                  |  |                                                     |  |             |  |   |   |   |        |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |   |  |  |  |                     |  |        |                                                                      |    |   |                                                                          |         |   |              |   |                                                                         |             |   |                  |   |
| De, Di                                                                   | ○                                        | ⊗                                                                    | ○                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |                                                                  |  |                                                     |  |             |  |   |   |   |        |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |   |  |  |  |                     |  |        |                                                                      |    |   |                                                                          |         |   |              |   |                                                                         |             |   |                  |   |
| L0                                                                       | ○                                        | ⊗                                                                    | ○                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |                                                                  |  |                                                     |  |             |  |   |   |   |        |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |   |  |  |  |                     |  |        |                                                                      |    |   |                                                                          |         |   |              |   |                                                                         |             |   |                  |   |
| F1                                                                       | ○                                        | ⊗                                                                    | ○                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |                                                                  |  |                                                     |  |             |  |   |   |   |        |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |   |  |  |  |                     |  |        |                                                                      |    |   |                                                                          |         |   |              |   |                                                                         |             |   |                  |   |
| F2                                                                       | ○                                        | ○                                                                    | ○                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |                                                                  |  |                                                     |  |             |  |   |   |   |        |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |   |  |  |  |                     |  |        |                                                                      |    |   |                                                                          |         |   |              |   |                                                                         |             |   |                  |   |
| e1                                                                       | ○                                        | ⊗                                                                    | ○                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |                                                                  |  |                                                     |  |             |  |   |   |   |        |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |   |  |  |  |                     |  |        |                                                                      |    |   |                                                                          |         |   |              |   |                                                                         |             |   |                  |   |
| e2                                                                       | ○                                        | ⊗                                                                    | ○                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |                                                                  |  |                                                     |  |             |  |   |   |   |        |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |   |  |  |  |                     |  |        |                                                                      |    |   |                                                                          |         |   |              |   |                                                                         |             |   |                  |   |
| d                                                                        |                                          |                                                                      |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |                                                                  |  |                                                     |  |             |  |   |   |   |        |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |   |  |  |  |                     |  |        |                                                                      |    |   |                                                                          |         |   |              |   |                                                                         |             |   |                  |   |
| Fertigungsausgleich                                                      |                                          | durch:                                                               |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |                                                                  |  |                                                     |  |             |  |   |   |   |        |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |   |  |  |  |                     |  |        |                                                                      |    |   |                                                                          |         |   |              |   |                                                                         |             |   |                  |   |
| 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                         | ○                                                                    |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |                                                                  |  |                                                     |  |             |  |   |   |   |        |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |   |  |  |  |                     |  |        |                                                                      |    |   |                                                                          |         |   |              |   |                                                                         |             |   |                  |   |
| 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 Staboberfläche               | gezogen<br>gewalzt<br>spitzenlos geschliffen<br>Feder kugelgestrahlt | ⊗<br>○<br>○<br>○ |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |                                                                  |  |                                                     |  |             |  |   |   |   |        |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |   |  |  |  |                     |  |        |                                                                      |    |   |                                                                          |         |   |              |   |                                                                         |             |   |                  |   |
| 8                                                                        | Oberflächenschutz :                      |                                                                      |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |                                                                  |  |                                                     |  |             |  |   |   |   |        |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |   |  |  |  |                     |  |        |                                                                      |    |   |                                                                          |         |   |              |   |                                                                         |             |   |                  |   |
| 9                                                                        | Werkstoff: 1.4310                        |                                                                      |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |                                                                  |  |                                                     |  |             |  |   |   |   |        |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |   |  |  |  |                     |  |        |                                                                      |    |   |                                                                          |         |   |              |   |                                                                         |             |   |                  |   |

|       |          |       |      |                                                                                     |      |            |  |  |
|-------|----------|-------|------|-------------------------------------------------------------------------------------|------|------------|--|--|
|       |          |       |      | Datum                                                                               | Name | Druckfeder |  |  |
|       |          |       |      | Bearb.                                                                              |      |            |  |  |
|       |          |       |      | Gepr.                                                                               |      |            |  |  |
|       |          |       |      | Norm                                                                                |      |            |  |  |
|       |          |       |      |  |      | RD-10020   |  |  |
| Zust. | Änderung | Datum | Name | ZILLER Böhmenkirch                                                                  |      |            |  |  |