

## Characteristics

**Standard series** – this range is the most popular, being used in most applications. High transmission values are possible, and by varying the screw tightening torque the Shrink Disc® can be adapted to the design specification.

**Simplified manufacture** – only plain shaft and bore diameters with easily achieved surface finish and tolerances are required.

**Easy adjustability** – No stops, steps, keyways, splines etc. are required, therefore hubs can be located and locked at any point or angle on the shaft.

**Easy mounting** – RINGFEDER® Shrink Discs® use standard screws and tightened using standard tools. No additional machining or fitting work is required.

**Easy removal** – after loosening the locking screws, the RINGFEDER® Shrink Disc® will self release and the hub will move freely on the shaft.

**Low susceptibility to contamination** – when the locking screws are tightened the contact (functional) surfaces are pressed firmly together and prevent contamination by dirt and moisture.



STAINLESS

| Size | Shrink Disc® dimensions |                |       |               |       |                |       |                |                |       |                | Transmissible torques or axial forces |                 |       |                | Locking screws DIN EN ISO A2-70 |        | Weight |                  |
|------|-------------------------|----------------|-------|---------------|-------|----------------|-------|----------------|----------------|-------|----------------|---------------------------------------|-----------------|-------|----------------|---------------------------------|--------|--------|------------------|
|      | d <sub>w</sub>          | C <sub>w</sub> | d     | Ch            | D     | L <sub>1</sub> | L     | d <sub>1</sub> | L <sub>2</sub> | l     | T <sub>A</sub> | T                                     | F <sub>ax</sub> | P     | σ <sub>v</sub> | Quantity                        | Thread | WT     | T <sub>max</sub> |
|      | Inch                    | Inch           | Inch  | Inch          | Inch  | Inch           | Inch  | Inch           | Inch           | Inch  | lb-ft          | lb-ft                                 | lbs             | psi   | n              |                                 | lbs    | lb-ft  |                  |
| 14   | 0.394                   |                | 0.551 |               | 1.457 | 0.591          | 0.472 | 0.945          | 0.197          | 0.354 | 1.5            | 16                                    | 1124            | 33350 | 61190          | 3                               | M4x10  | 0.2    | 20               |
|      | 28                      |                |       |               |       |                |       |                |                |       |                | 1798                                  | 76995           |       | 35             |                                 |        |        |                  |
|      | 38                      |                |       |               |       |                |       |                |                |       |                | 2473                                  | 62785           |       | 47             |                                 |        |        |                  |
| 16   | 0.472                   |                | 0.630 |               | 1.614 | 0.728          | 0.591 | 1.063          | 0.246          | 0.472 | 3              | 59                                    | 3147            | 36250 | 99180          | 3                               | M5x12  | 0.2    | 74               |
|      | 66                      |                |       |               |       |                |       |                |                |       |                | 3597                                  | 70035           |       | 83             |                                 |        |        |                  |
| 18   | 0.551                   |                | 0.709 | +0<br>-0.0013 | 1.732 | 0.728          | 0.591 | 1.142          | 0.246          | 0.472 | 3              | 95                                    | 4496            | 43065 | 119190         | 4                               | M5x12  | 0.2    | 119              |
|      | 87                      |                |       |               |       |                |       |                |                |       |                | 4496                                  | 69455           |       | 109            |                                 |        |        |                  |
| 20   | 0.669                   | 0.0007         | 0.787 |               | 1.811 | 0.807          | 0.669 | 1.260          | 0.276          | 0.472 | 3              | 119                                   | 5395            | 48430 | 94105          | 5                               | M5x15  | 0.3    | 149              |
|      | 140                     |                |       |               |       |                |       |                |                |       |                | 5620                                  | 63945           |       | 177            |                                 |        |        |                  |
| 24   | 0.748                   |                | 0.945 |               | 1.969 | 0.906          | 0.768 | 1.417          | 0.315          | 0.591 | 3              | 184                                   | 6744            | 38715 | 91785          | 6                               | M5x18  | 0.4    | 229              |
|      | 236                     |                |       |               |       |                |       |                |                |       |                | 7643                                  | 56115           |       | 295            |                                 |        |        |                  |
| 30   | 0.827                   |                | 1.181 |               | 2.362 | 0.984          | 0.846 | 1.732          | 0.354          | 0.669 | 3              | 295                                   | 8542            | 35090 | 74240          | 7                               | M5x18  | 0.7    | 369              |
|      | 427                     |                |       |               |       |                |       |                |                |       |                | 7194                                  | 42775           |       | 302            |                                 |        |        |                  |
| 36   | 1.024                   |                | 1.417 |               | 2.835 | 1.083          | 0.925 | 2.047          | 0.394          | 0.709 | 6              | 243                                   | 7194            | 31030 | 42775          | 5                               | M6x20  | 0.9    | 302              |
|      | 354                     |                |       |               |       |                |       |                |                |       |                | 8992                                  | 51475           |       | 443            |                                 |        |        |                  |
| 38   | 1.142                   |                | 1.496 |               | 2.835 | 1.181          | 1.024 | 2.165          | 0.433          | 0.827 | 6              | 361                                   | 9442            | 30160 | 43645          | 6                               | M6x25  | 1.1    | 450              |
|      | 413                     |                |       |               |       |                |       |                |                |       |                | 9442                                  | 56985           |       | 509            |                                 |        |        |                  |
| 44   | 1.220                   |                | 1.732 | +0<br>-0.0015 | 3.150 | 1.181          | 1.024 | 2.402          | 0.433          | 0.787 | 6              | 391                                   | 9442            | 31900 | 50895          | 7                               | M6x25  | 1.2    | 487              |
|      | 546                     |                |       |               |       |                |       |                |                |       |                | 11465                                 | 54375           |       | 686            |                                 |        |        |                  |
| 48   | 1.260                   |                | 1.890 |               | 3.150 | 1.181          | 1.024 | 2.677          | 0.433          | 0.866 | 6              | 450                                   | 9442            | 26680 | 44370          | 7                               | M6x25  | 1.2    | 561              |
|      | 620                     |                |       |               |       |                |       |                |                |       |                | 11690                                 | 48140           |       | 774            |                                 |        |        |                  |
| 50   | 1.417                   | 0.0013         | 1.969 |               | 3.543 | 1.260          | 1.102 | 2.756          | 0.472          | 0.866 | 6              | 671                                   | 13488           | 32915 | 49590          | 9                               | M6x25  | 1.8    | 841              |
|      | 878                     |                |       |               |       |                |       |                |                |       |                | 15736                                 | 55825           |       | 1099           |                                 |        |        |                  |
| 55   | 1.496                   |                | 2.165 |               | 3.937 | 1.358          | 1.201 | 2.953          | 0.512          | 0.906 | 6              | 642                                   | 11690           | 25375 | 40745          | 8                               | M6x25  | 2.4    | 804              |
|      | 937                     |                |       |               |       |                |       |                |                |       |                | 14837                                 | 49155           |       | 1173           |                                 |        |        |                  |
| 62   | 1.890                   |                | 2.441 |               | 4.331 | 1.378          | 1.220 | 3.386          | 0.512          | 0.906 | 6              | 1210                                  | 19333           | 33785 | 46835          | 12                              | M6x30  | 2.9    | 1512             |
|      | 1416                    |                |       |               |       |                |       |                |                |       |                | 20682                                 | 57275           |       | 1770           |                                 |        |        |                  |
| 68   | 1.969                   |                | 2.677 | +0<br>-0.0018 | 4.528 | 1.378          | 1.220 | 3.386          | 0.512          | 0.906 | 6              | 833                                   | 12814           | 25665 | 44515          | 10                              | M6x30  | 3.1    | 1040             |
|      | 1460                    |                |       |               |       |                |       |                |                |       |                | 11914                                 | 59160           |       | 1829           |                                 |        |        |                  |
| 75   | 2.165                   |                | 2.953 |               | 5.433 | 1.496          | 1.280 | 3.937          | 0.551          | 0.984 | 15             | 1195                                  | 16635           | 26680 | 43355          | 7                               | M8x30  | 3.7    | 1497             |
|      | 1940                    |                |       |               |       |                |       |                |                |       |                | 22705                                 | 47560           |       | 2427           |                                 |        |        |                  |
| 80   | 2.362                   |                | 3.150 |               | 5.709 | 1.496          | 1.280 | 3.937          | 0.551          | 0.984 | 15             | 1364                                  | 17310           | 25085 | 40600          | 7                               | M8x30  | 4.2    | 1704             |
|      | 2124                    |                |       |               |       |                |       |                |                |       |                | 23154                                 | 44950           |       | 2655           |                                 |        |        |                  |
| 90   | 2.559                   | 0.0019         | 3.543 |               | 6.102 | 1.752          | 1.535 | 4.488          | 0.669          | 1.181 | 15             | 2058                                  | 24054           | 26535 | 39875          | 10                              | M8x35  | 7.3    | 2574             |
|      | 3046                    |                |       |               |       |                |       |                |                |       |                | 31022                                 | 41905           |       | 3806           |                                 |        |        |                  |
| 100  | 2.756                   |                | 3.937 | +0<br>-0.0021 | 6.693 | 1.949          | 1.732 | 4.882          | 0.748          | 1.339 | 15             | 2552                                  | 27650           | 25230 | 37265          | 12                              | M8x35  | 10.4   | 3194             |
|      | 3666                    |                |       |               |       |                |       |                |                |       |                | 34844                                 | 37845           |       | 4580           |                                 |        |        |                  |
| 110  | 2.953                   |                | 4.331 |               | 7.283 | 2.244          | 1.969 | 5.354          | 0.866          | 1.535 | 30             | 3201                                  | 32596           | 24215 | 35090          | 9                               | M10x40 | 13.0   | 4005             |
|      | 4492                    |                |       |               |       |                |       |                |                |       |                | 40239                                 | 35235           |       | 5613           |                                 |        |        |                  |
| 125  | 3.346                   | 0.0027         | 4.921 | +0<br>-0.0025 | 8.465 | 2.402          | 2.126 | 6.299          | 0.906          | 1.654 | 30             | 4595                                  | 41138           | 26390 | 40745          | 12                              | M10x40 | 18.3   | 5746             |
|      | 6314                    |                |       |               |       |                |       |                |                |       |                | 50805                                 | 40310           |       | 7892           |                                 |        |        |                  |

More sizes on request

## Explanations to tables

$d, D, L, l, L_1, L_2, d_1$  = Basic dimensions

$d_w$  = solid shaft diameter (provided by the customer)

$T$  = transmissible torque

$F_{ax}$  = transmissible axial force

$p$  = approx. surface pressure on the hub extension (diameter  $d$ )

$T_A$  = required tightening torque per screw (Screws greased with molykote!)

$n$  = quantity of screws

$T_{max}$  = maximum theoretical transmissible torque

$C_w$  = shaft clearance

$Ch$  = Hub tolerance

$\sigma_v$  = calculated combined stress in the hub extension ( $d/d_w$ ) under consideration of the tangential, radial and torsional stresses following the equation:

$$\sigma_v = \sqrt{\frac{1}{2} [(\sigma_x - \sigma_y)^2 + (\sigma_y - \sigma_z)^2 + (\sigma_z - \sigma_x)^2] + 3\tau^2}$$

Additional loads, e.g. tension, thrust or bending have to be taken into consideration accordingly.

### Function values

The functional characteristics are valid with the screw tightening torque listed in the tables and the following assumed conditions:

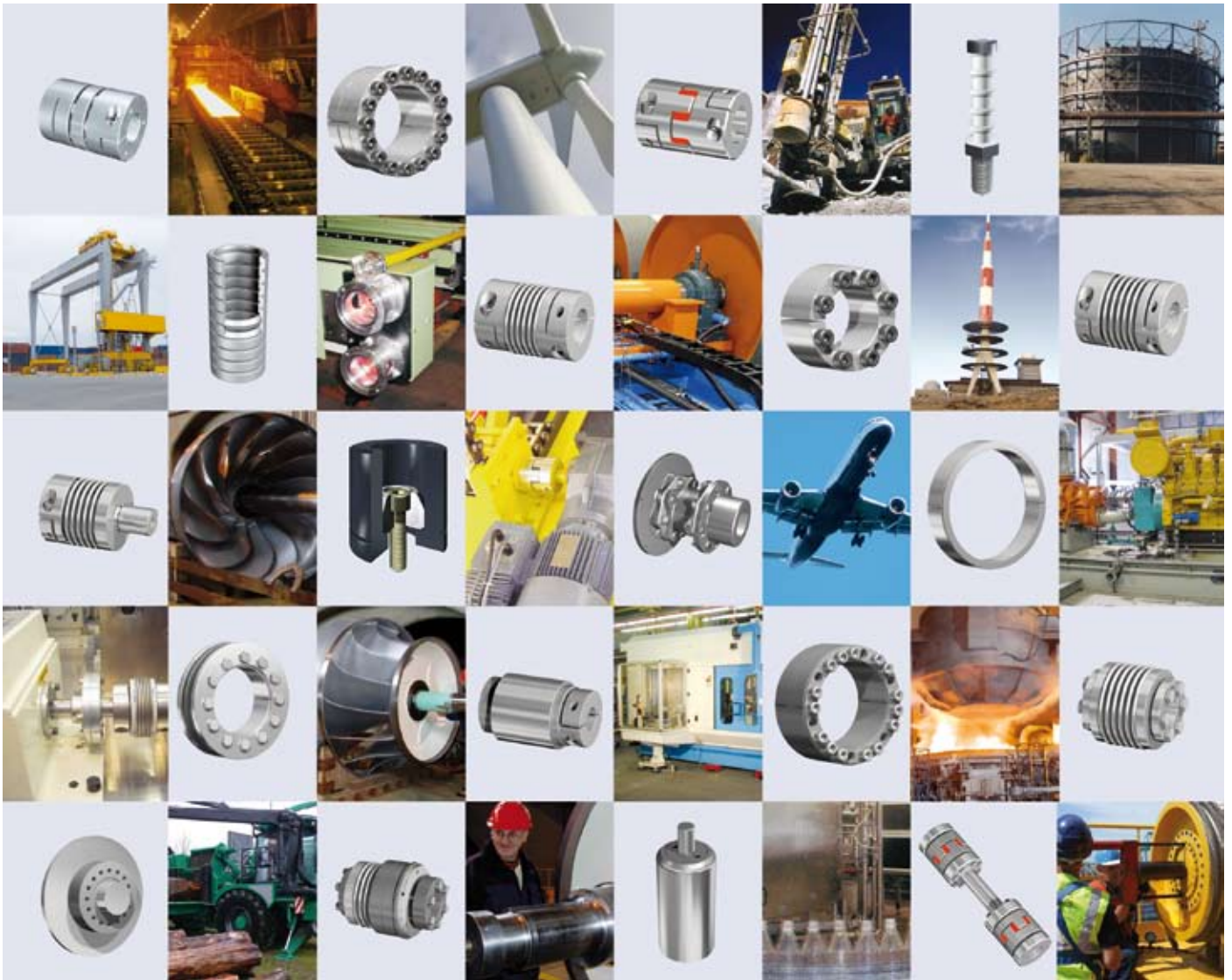
The locking screws are lubricated using MoS<sub>2</sub> ( $\mu_{tot} = 0.1$ ).  
The tapered cones are lubricated using MoS<sub>2</sub> ( $\mu = 0.05$ ).  
The contact surfaces ( $d_w$ ) are in lightly oiled condition with coefficient of friction  $\mu = 0.12$ .

The hub and shaft materials have a modulus of elasticity of  $30 \times 10^6$  PSI. (Lower values result in increased values for  $T$  and  $F_{ax}$  with reduced tangential stress.)

The maximum clearance is being fully utilized.

The shaft being used is solid, for hollow shaft applications the functional values will change.

In cases where the assumed conditions do not apply then contact our Technical Department where we will be happy to assist you with your application.



**Check out the respective catalogue for further technical details**

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