

Shrink Discs



Shrink Discs



Shrink Discs stainless steel

EN 08.2019

Product Paper & Tech Paper



Welcome



Machine Building



Aerospace



Process



Movement



Energy



Extraction



Your system supplier for every aspect of power transmission

We say what we mean and mean what we say.

We see things from our customers' perspective.

We are considerate of our employees and their families as well as of our environment and society.



RINGFEDER POWER TRANSMISSION is the global market leader in the niche markets of drive technology and is well regarded for its customer-specific, application-oriented solutions that ensure excellent and failure-free operation for its clients. We offer locking devices, damping technology and couplings for OEMs but also for the final customer under our strong brand name RINGFEDER®.

We do not only provide competent advice to our customers on the basis of our 90 years of experience but also develop innovative ideas in cooperation with them. This is part of our aspiration to be a **Partner for Performance**.

Around the power transmission we promise

- Excellent know-how for our challenging customers
- Best cost-benefit ratio
- Short reaction times and a high product availability





Know-how

Over 90 years of expertise.

Your expert partner
From development to the finished product.

On-site worldwide

We are there for you. Anytime, anywhere.

Customer

Value

Online calculation program
Always find the right solution.

Your projects are our drive

Know-how: Over 90 years of expertise.

Rely on decades of engineering expertise from the inventor of the friction spring. As an expert in drive and damping technology, we are your reliable partner wherever forces are at work. Be it the permanent transfer of very high torques due to non-positive or positive connections or the absorption and trapping of extreme energies to protect expensive constructions.

Your expert partner: From development to the finished product.

We accompany you through to the successful completion of your project. Beginning with the development phase of your project, we offer our know-how and professional solutions. By working together with global market leaders and as an international supplier of outstanding products and special solutions, we are a reliable partner for you.

Online calculation program: Always find the right solution.

In response to the complex requirements involved in the correct selection and design of the required products under practical conditions, we have developed our online calculation program. Engineers and experts are able to calculate transferable torques and other important values, taking into account various parameters. Visit our website **www.ringfeder.com**!

On-site worldwide: We are there for you. Anytime, anywhere.

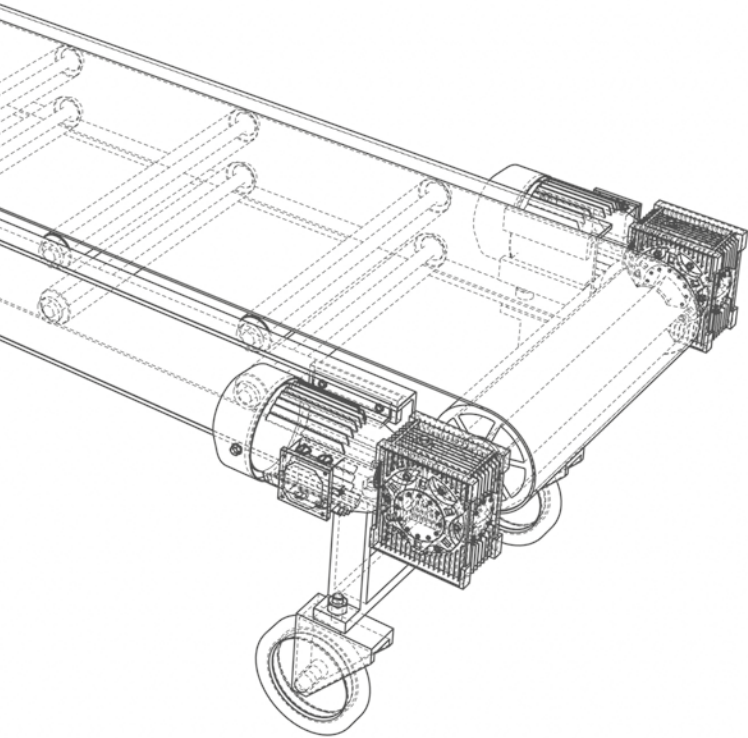
With our locations in Germany, the Czech Republic, the USA, Brazil, China and India as well as a worldwide service and partner network, we are there for you around the clock. This ensures our support for the successful completion of your projects at any time.

RINGFEDER®

Shrink Discs

Introduction

Keyless shaft-hub locking devices have been the cornerstone of the RINGFEDER®. For over 90 years, our product offering of internal clamping and external clamping locking devices and global support has been unparalleled in the industry.



Characteristics

Shrink discs are the modern method for creating a mechanical shrink fit. The shrink disc consists of either one or two thrust rings with tapered bores and a mating tapered inner ring. By tightening locking screws the thrust rings are drawn together compressing the inner ring and applying pressure to the outside of the hub clamping it to the shaft. Thus the shrink disc is not in the load path. The torque can be transferred in a force-locking manner on the joining surface between the shaft and the hub without an intermediate element. This creates an optimum fit (shrink fit) for highly stressed shaft-hub connections. Before now the optimum fit needed to be produced through complex calculation, the smallest production tolerances and considerable effort during assembly and dismantling. Problems also occur during any necessary repairs (exchangeability, setting and/or centring, etc.). No other kind of shaft-hub connection has even close to these good features with regard to permanent rotational stability and has such excellent concentricity.

Clearances considered for the calculation of the function values

d _w		ISO	max. Clearance S mm
above	up to		
6	10	H6/j6	0,011
10	18		0,014
18	30		0,017
30	50	H6/h6	0,032
50	80	H6/g6	0,048
80	120	7/g6	0,069
120	180		0,079
180	250		0,090
250	315		0,101
315	400		0,111
400	500		0,123
500	630		0,136
630	800		0,154

Surface finishes

For shaft diameter d_w: **R_a ≤ 3,2 µm**
 For hub bore: **R_a ≤ 3,2 µm**

Any other tolerances can be chosen. As long as the stated max. clearance is not exceeded, there will be no variations of the functional characteristics.

Unlimited range of applications – RINGFEDER® Shrink Disc connections are suitable for securing all types of hubs onto shafts and axles. Replacing traditional shrink fits, keys and polygon connections, splined shafts etc. So cog wheels and sprockets, levers, lifters, cam discs, pulleys or brake discs, balance wheels, couplings, slip on gear mechanisms, flanges, pulley wheels and rotors can be attached absolutely reliable.

2-part

Two-part shrink discs by RINGFEDER® are characterised by an extremely flat single cone and transfer the necessary torque in a similar way to a taper interference fit. The screws on the shrink discs can be tightened without using a torque wrench and therefore the discs can be mounted quickly and easily. The transferred torque is thus ensured via route-controlled assembly.

3-part

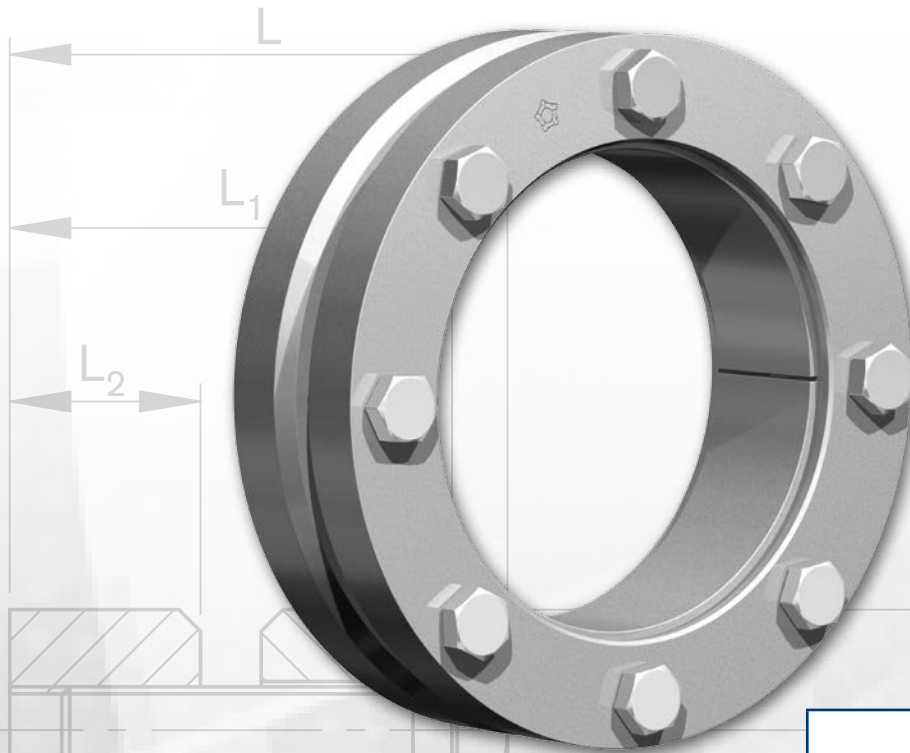
Three-part RINGFEDER® shrink discs are characterised by a steep double cone and transfer the required torque in a similar way to a taper interference fit. In contrast to this, however, the RINGFEDER® shrink discs can be simply and quickly assembled and disassembled. The shrink disc itself is not in the flow of forces. The distance between the flanges allows simple function checking. The function values can be adapted specifically to the individual customer and application requirements by varying the screw tightening torque.

RINGFEDER® Shrink Discs

Shrink Disc	Series	Transmissible torques T [Nm]	Shaft diameter d [mm]	2-part	3-part
 RINGFEDER® RfN 4051	Light Duty Series	10 550 – 1 066 000	125 – 500		●
 RINGFEDER® RfN 4061	Standard Series	30 – 87 200	14 – 200		●
 RINGFEDER® RfN 4071	Standard Series	95 000 – 1 455 000	220 – 500		●
 RINGFEDER® RfN 4073	Mini Series	9 – 7 260	14 – 160		●
 RINGFEDER® RfN 4091	Heavy Duty Series	1 800 – 1 940 000	50 – 500		●
 RINGFEDER® RfN 4161	Standard Series	80 – 124 000	18 – 200	●	
 RINGFEDER® RfN 4181	Heavy Duty Series	160 000 – 8 390 000	220 – 800	●	
 RINGFEDER® RfN 4061 stainless steel	Standard Series	30 – 87 200	14 – 200		●

Disclaimer of liability

All technical details and notes are non-binding and cannot be used as a basis for legal claims. The user is obligated to determine whether the represented products meet his requirements. We reserve the right to carry out modifications at any time in the interests of technical progress.



RfN 4051

Further information on
RINGFEDER® RfN 4051
on www.ringfeder.com

2-part

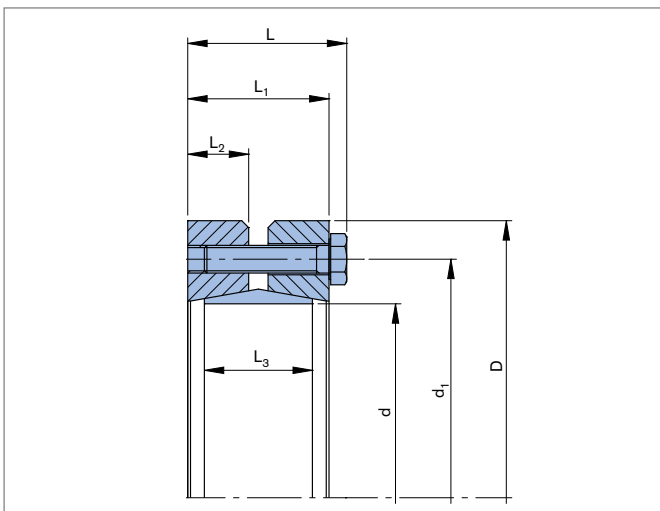
3-part

Lighter version for moderate transfer values – particularly suited for thin hubs and hollow shafts

The **RINGFEDER® RfN 4051** is a three-part shrink disc and serves to transfer low to moderate torque. The narrow pressure rings require only a very small space. The transferrable torque can be set in a targeted manner for the corresponding application by changing the screw tightening torque.

Characteristics

- **Light design** – suitable for medium transmissible values when space is limited.
- **Slit inner ring** – low forces and pressures on hub and shaft.
- **Compensation of small tolerance errors** – please contact our engineers.
- **Maximum reliability** – suitable for static, dynamic and impact loads.
- **Simplified manufacture** – only plain shaft and bore diameters with easily achieved surface finish and tolerances are required.
- **Easy replacement** – the RINGFEDER® Shrink Disc is free from any form fit.
- **Easy mounting** – no steps, keyways, splines are required, therefore hubs can be located and locked at any point or angle on the shaft. RINGFEDER® Shrink Discs use standard screws tightened with standard tools. No additional machining or fitting work is required.
- **Low susceptibility to contamination** – when the locking screws are tightened the functional contact surfaces are pressed firmly together and prevent the ingress of dirt and moisture.



Further information on
RINGFEDER® RfN 4061
on www.ringfeder.com



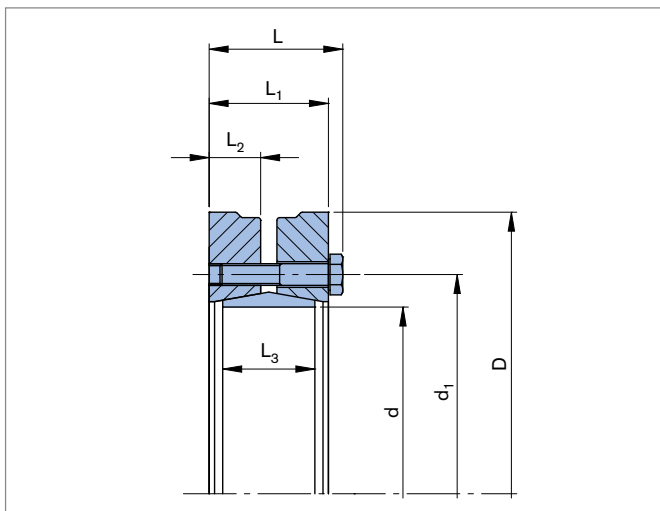
2-part

3-part

Standard series for high torque

Slit inner ring – low losses and pressure on the hub.

Forged pressure rings with the highest stability for the best stress distribution, the highest security against breakage and thus ideal material use. Cost-efficient solution with high capacity in the largest possible range of applications. The preload force can be set targeted to the relevant application. The **RINGFEDER® RfN 4061** series is the direct further development of the RINGFEDER® RfN 4071 series up to an internal diameter of 200 mm.



Characteristics

- **Standard series** – this is the most popular shrink disc. High transmission values are possible and by varying the screw tightening torque the shrink disc can be adapted to the design specification.
- **Slit inner ring** – low forces and pressures on hub and shaft. Compensation of small tolerance errors – please contact our engineers.
- **Maximum reliability** – suitable for static, dynamic and impact loads.
- **Simplified manufacture** – only plain shaft and bore diameters with easily achieved surface finish and tolerances are required.
- **Easy replacement** – the RINGFEDER® Shrink Disc is free from any form fit.
- **Easy mounting** – no steps, keyways, splines are required, therefore hubs can be located and locked at any point or angle on the shaft. RINGFEDER® Shrink Discs use standard screws tightened with 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 functional contact surfaces are pressed firmly together and prevent the ingress of dirt and moisture.



RfN 4071

Further information on
RINGFEDER® RfN 4071
on www.ringfeder.com

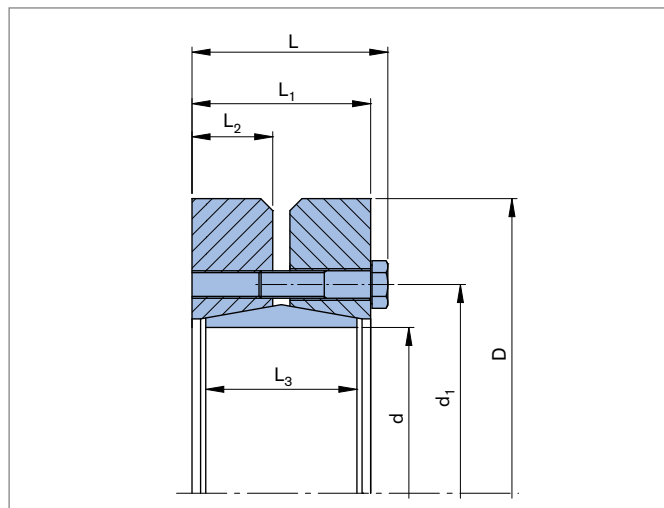
2-part

3-part

Standard series for high torque

Slit inner ring – low losses and pressure on the hub.

Extension of the RINGFEDER® RfN 4061 series from an internal diameter of 220 mm up to the largest diameters. Cost-efficient solution with high capacity in the largest possible range of applications. The preload force can be set targeted to the relevant application.



Characteristics

- **Standard series** – this is the most popular shrink disc. High transmission values are possible and by varying the screw tightening torque the shrink disc can be adapted to the design specification.
- **Slit inner ring** – low forces and pressures on hub and shaft.
- **Maximum reliability** – suitable for static, dynamic and impact loads.
- **Simplified manufacture** – only plain shaft and bore diameters with easily achieved surface finish and tolerances are required.
- **Easy replacement** – the RINGFEDER® Shrink Disc is free from any form fit.
- **Easy mounting** – no steps, keyways, splines are required, therefore hubs can be located and locked at any point or angle on the shaft. RINGFEDER® Shrink Discs use standard screws tightened with 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 functional contact surfaces are pressed firmly together and prevent the ingress of dirt and moisture.



Further information on
RINGFEDER® RfN 4073
on www.ringfeder.com

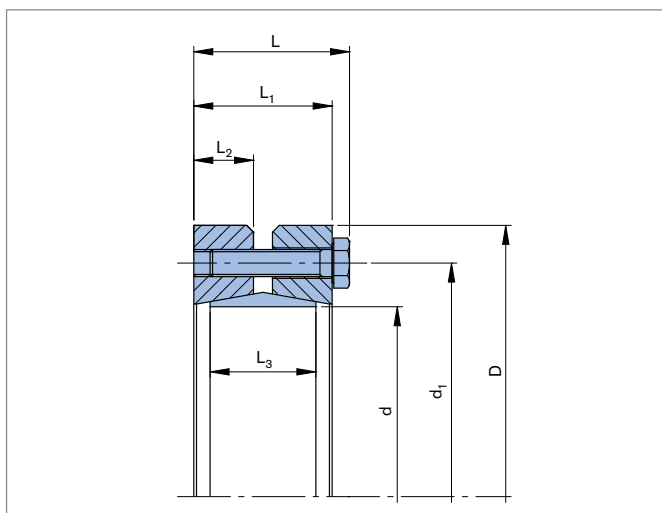
2-part

3-part

Mini series for particularly light applications

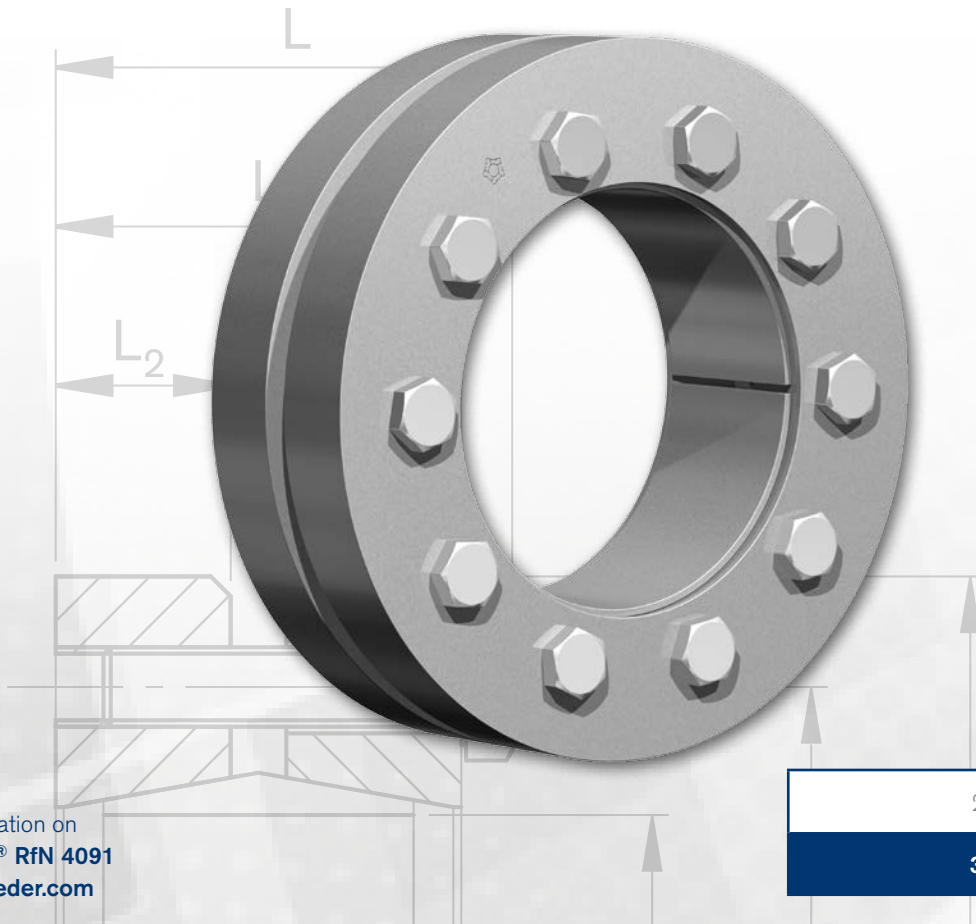
Mini series with low moment of inertia, particularly for mechanical seals and small gears.

Its particularly light structure makes the **RINGFEDER® RfN 4073** series ideal for applications with reduced requirements for transfer values and/or very low to no dynamic loads. The preload force can be set targeted to the needs of the relevant application.



Characteristics

- **Mini series** – this range is a very compact design with low inertia values. It is ideally suited for mechanical seal and small gearbox applications.
- **Slit inner ring** – low forces and pressures on hub and shaft.
- **Compensation of small tolerance errors** – please contact our engineers.
- **Maximum reliability** – suitable for static, dynamic and impact loads.
- **Simplified manufacture** – only plain shaft and bore diameters with easily achieved surface finish and tolerances are required.
- **Easy replacement** – the RINGFEDER® Shrink Disc is free from any form fit.
- **Easy mounting** – no steps, keyways, splines are required, therefore hubs can be located and locked at any point or angle on the shaft. RINGFEDER® Shrink Discs use standard screws tightened with 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 functional contact surfaces are pressed firmly together and prevent the ingress of dirt and moisture.



RfN 4091

Further information on
RINGFEDER® RfN 4091
on www.ringfeder.com

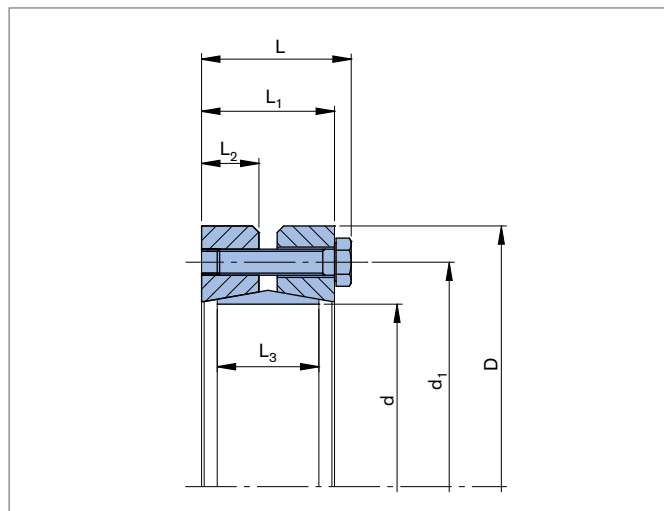
2-part

3-part

Heavy series for the highest torque

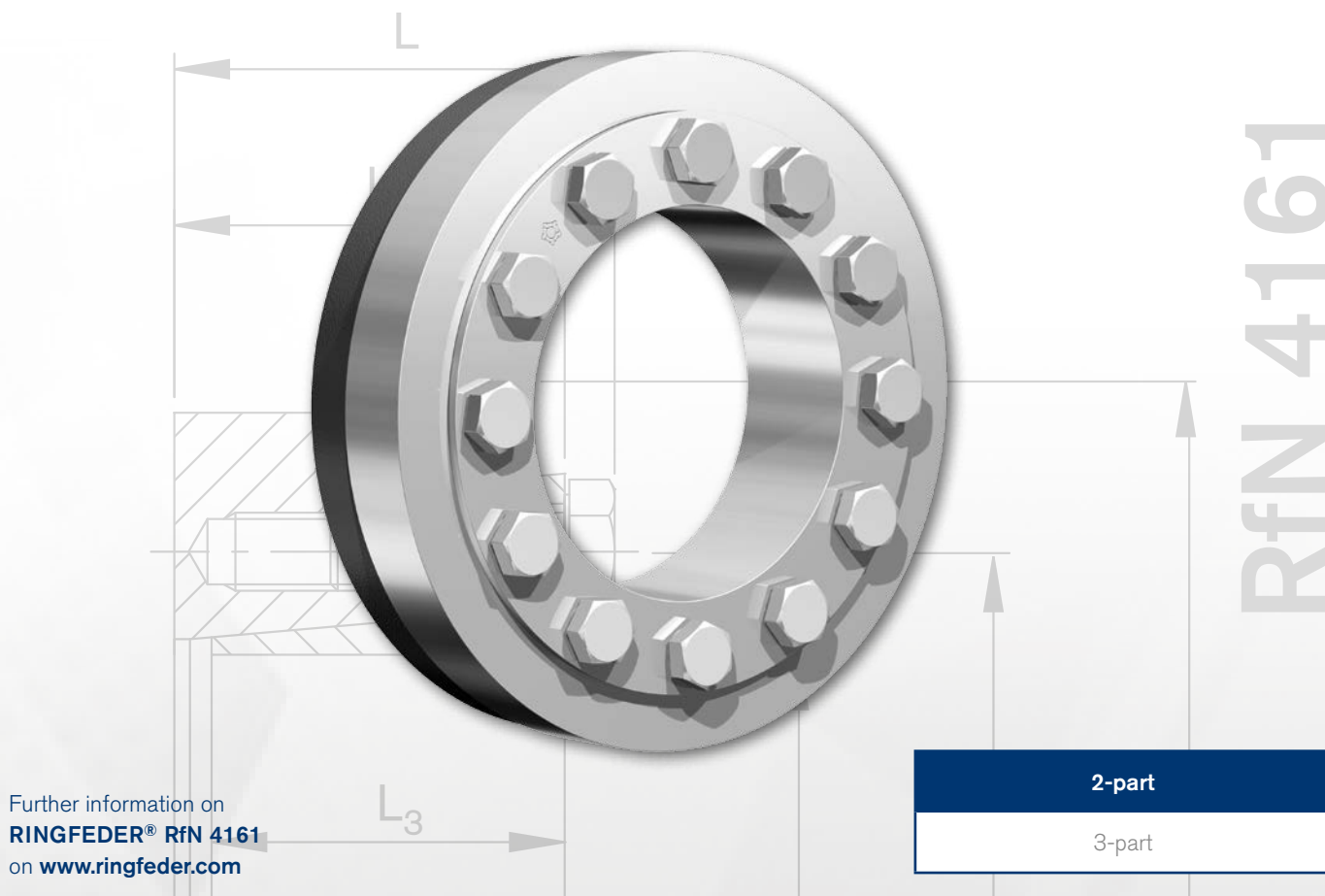
Slit inner ring – low losses and pressure on the hub.

Its wider structure with particularly strong outer rings gives the **RINGFEDER® RfN 4091** series the highest transfer values – even in applications that involve extremely static or dynamic loads. The preload force can be set targeted to the relevant application.



Characteristics

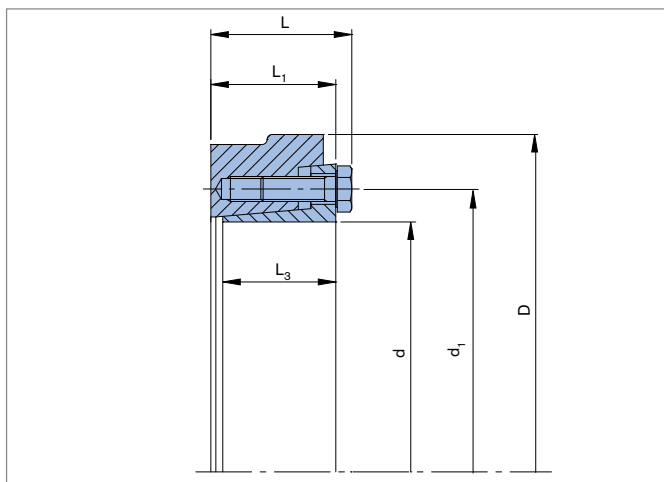
- **Heavy design** – for highest transmission values.
- **Slit inner ring** – low forces and pressures on hub and shaft.
- **Compensation of small tolerance errors** – please contact our engineers.
- **Maximum reliability** – suitable for static, dynamic and impact loads.
- **Simplified manufacture** – only plain shaft and bore diameters with easily achieved surface finish and tolerances are required.
- **Easy mounting** – no steps, keyways, splines are required, therefore hubs can be located and locked at any point or angle on the shaft. RINGFEDER® Shrink Discs use standard screws tightened with 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 functional contact surfaces are pressed firmly together and prevent the ingress of dirt and moisture.



Further information on
RINGFEDER® RfN 4161
 on www.ringfeder.com

Standard series for high torque

Forged outer/pressure ring for the best stress distribution and thus ideal material use. Route controlled version with defined displacement path. Very good concentricity characteristics through contact by both rings in the clamped condition. The assembly can be carried out without a torque wrench. The clamping is thus independent of the screws' friction system. The **RINGFEDER® RfN 4161** series is replaced by the larger RINGFEDER® RfN 4181 from an internal diameter of 220 mm.



Characteristics

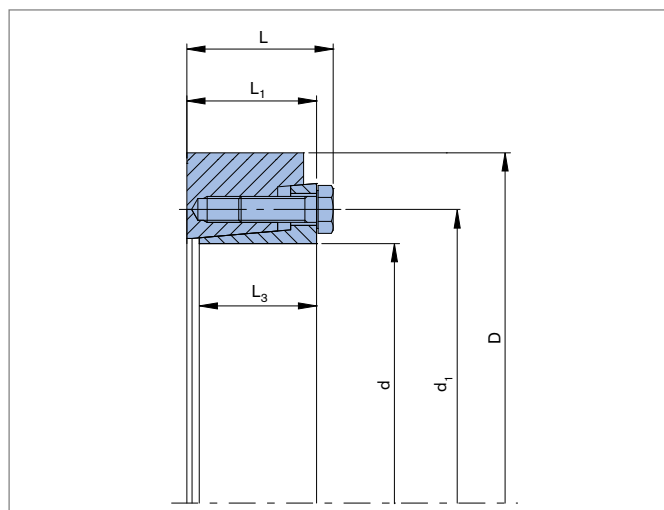
- **Standard design** – for high transmission values.
- **Slit inner ring** – low forces and pressures on hub and shaft.
- **Compensation of small tolerance errors** – please contact our engineers.
- **Maximum reliability** – suitable for static, dynamic and impact loads.
- **Simplified manufacture** – only plain shaft and bore diameters with easily achieved surface finish and tolerances are required.
- **Easy replacement** – the RINGFEDER® Shrink Disc is free from any form fit.
- **Easy mounting** – no steps, keyways, splines are required, therefore hubs can be located and locked at any point or angle on the shaft. RINGFEDER® Shrink Discs use standard screws tightened with standard tools. No additional machining or fitting work is required.
- **Short installation time** - cost savings particularly in serial production.
- **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 functional contact surfaces are pressed firmly together and prevent the ingress of dirt and moisture.



Further information on
RINGFEDER® RfN 4181
on www.ringfeder.com

Standard series for the highest torque

Route controlled version with defined displacement path. Very good concentricity characteristics through contact by both rings in the clamped condition. The clamping is independent of the screws' friction system. The **RINGFEDER® RfN 4181** series is replaced by the larger **RINGFEDER® RfN 4161** from an internal diameter of 220 mm. The clamping is thus independent of the screws' friction system.



Characteristics

- **Two part shrink disc heavy duty series** – with additional guide mechanism for the inner ring. For the transmission of maximum torques.
- **Highest reliability** – applicable for static, dynamic and impact loads.
- **Simplified manufacture** – only plain shaft and bore diameters with easily achieved surface finish and tolerances are required.
- **Fully replaceable** – the **RINGFEDER®** Shrink Discs work without any positive locking.
- **Visual check of the tightening status** – minimisation of faults during assembly.
- **Easy mounting** – **RINGFEDER®** Shrink Discs use standard screws and tightened using standard tools. No additional machining or fitting work is required.
- **Short assembly times** – cost savings particularly in the case of series production.
- **Low susceptibility to contamination** – when the locking screws are tightened the contact (functional) surfaces are pressed firmly together and prevent the ingress of dirt and moisture.
- **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.



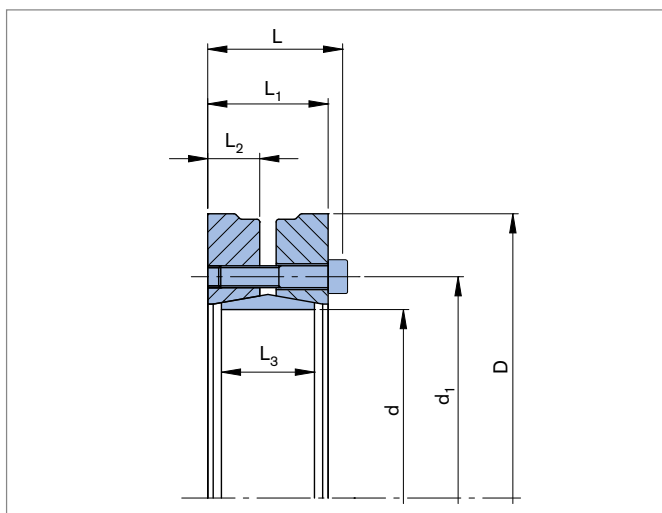
Further information on
RINGFEDER® RfN 4061 stainless steel
on www.ringfeder.com

2-part

3-part

Corrosion resistant series for high torques

Shrink discs of the rust-free **RINGFEDER® RfN 4061** series comprise forged pressure rings in alloyed steel and high-strength special screws in stainless steel – for the best stress distribution and thus ideal material use with simultaneous corrosion resistance to outside influences. This series is thus the rust-free solution with an enormous capacity in an extraordinarily wide spectrum of applications. It thus realises the same transfer values as the **RINGFEDER® RfN 4061** series. The necessary preload force can be set in a targeted manner to the requirements of the relevant application.



Characteristics

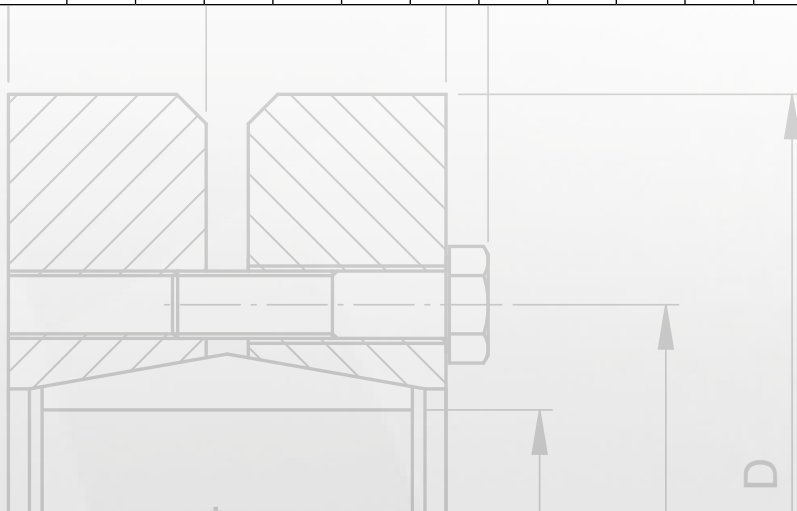
- **Standard series** – High transmission values are possible and by varying the screw tightening torque the shrink disc can be adapted to the design specification.
- **Slit inner ring** – low forces and pressures on hub and shaft.
- **Compensation of small tolerance errors** – please contact our engineers.
- **Maximum reliability** – suitable for static, dynamic and impact loads.
- **Simplified manufacture** – only plain shaft and bore diameters with easily achieved surface finish and tolerances are required.
- **Easy replacement** – the **RINGFEDER®** Shrink Disc is free from any form fit.
- **Easy mounting** – no steps, keyways, splines are required, therefore hubs can be located and locked at any point or angle on the shaft. **RINGFEDER®** Shrink Discs use standard screws tightened with 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 functional contact surfaces are pressed firmly together and prevent the ingress of dirt and moisture.

ISO Tolerances

Shafts

Nominal diameter of shaft mm		d11 μm		e8 μm		e7 μm		f8 μm		f7 μm		g6 μm		h11 μm		h9 μm		h8 μm		h7 μm	
above	to	upper	lower	upper	lower	upper	lower	upper	lower	upper	lower	upper	lower	upper	lower	upper	lower	upper	lower	upper	lower
3	6	- 30	- 105	- 20	- 38	- 20	- 32	- 10	- 28	- 10	- 22	- 4	- 12	0	- 75	0	- 30	0	- 18	0	- 12
6	10	- 40	- 130	- 25	- 47	- 25	- 40	- 13	- 35	- 13	- 28	- 5	- 14	0	- 90	0	- 36	0	- 22	0	- 15
10	18	- 50	- 160	- 32	- 59	- 32	- 50	- 16	- 43	- 16	- 34	- 6	- 17	0	- 110	0	- 43	0	- 27	0	- 18
18	30	- 65	- 195	- 40	- 73	- 40	- 61	- 20	- 53	- 20	- 42	- 7	- 20	0	- 130	0	- 52	0	- 33	0	- 21
30	50	- 80	- 240	- 50	- 89	- 50	- 75	- 25	- 64	- 25	- 50	- 9	- 25	0	- 160	0	- 62	0	- 39	0	- 25
50	80	- 100	- 290	- 60	- 106	- 60	- 90	- 30	- 76	- 30	- 60	- 10	- 29	0	- 190	0	- 74	0	- 46	0	- 30
80	120	- 120	- 340	- 72	- 126	- 72	- 107	- 36	- 90	- 36	- 71	- 12	- 34	0	- 220	0	- 87	0	- 54	0	- 35
120	180	- 145	- 395	- 85	- 148	- 85	- 125	- 43	- 106	- 43	- 83	- 14	- 39	0	- 250	0	- 100	0	- 63	0	- 40
180	250	- 170	- 460	- 100	- 172	- 100	- 146	- 50	- 122	- 50	- 96	- 15	- 44	0	- 290	0	- 115	0	- 72	0	- 46
250	315	- 190	- 510	- 110	- 191	- 110	- 162	- 56	- 137	- 56	- 108	- 17	- 49	0	- 320	0	- 130	0	- 81	0	- 52
315	400	- 210	- 570	- 125	- 214	- 125	- 182	- 62	- 151	- 62	- 119	- 18	- 54	0	- 360	0	- 140	0	- 89	0	- 57
400	500	- 230	- 630	- 135	- 232	- 135	- 198	- 68	- 165	- 68	- 131	- 20	- 60	0	- 440	0	- 155	0	- 97	0	- 63
500	630	- 260	- 700	- 145	- 255	- 145	- 215	- 76	- 186	- 76	- 146	- 22	- 66	0	- 440	0	- 175	0	- 110	0	- 70
630	800	- 290	- 790	- 160	- 285	- 160	- 240	- 80	- 205	- 80	- 160	- 24	- 74	0	- 500	0	- 200	0	- 125	0	- 80

Nominal diameter of shaft mm		h6 μm		h5 μm		j6 μm		k6 μm		k5 μm		m6 μm		m5 μm		n6 μm		p6 μm	
above	to	upper	lower	upper	lower	upper	lower	upper	lower	upper	lower	upper	lower	upper	lower	upper	lower	upper	lower
3	6	0	- 8	0	- 5	+ 7	- 1	-	-	-	-	+ 12	+ 4	+ 9	+ 4	+ 16	+ 8	+ 20	+ 12
6	10	0	- 9	0	- 6	+ 7	- 2	+ 10	+ 1	+ 7	+ 1	+ 15	+ 6	+ 12	+ 6	+ 19	+ 10	+ 24	+ 15
10	18	0	- 11	0	- 8	+ 8	- 3	+ 12	+ 1	+ 9	+ 1	+ 18	+ 7	+ 15	+ 7	+ 23	+ 12	+ 29	+ 18
18	30	0	- 13	0	- 9	+ 9	- 4	+ 15	+ 2	+ 11	+ 2	+ 21	+ 8	+ 17	+ 8	+ 28	+ 15	+ 35	+ 26
30	50	0	- 16	0	- 11	+ 11	- 5	- 18	+ 2	+ 13	+ 2	+ 25	+ 9	+ 20	+ 9	+ 33	+ 17	+ 42	+ 26
50	80	0	- 19	0	- 13	+ 12	- 7	+ 21	+ 2	+ 15	+ 2	+ 30	+ 11	+ 24	+ 11	+ 39	+ 20	+ 51	+ 32
80	120	0	- 22	0	- 15	+ 13	- 9	+ 25	+ 3	+ 18	+ 3	+ 35	+ 13	+ 28	+ 13	+ 45	+ 23	+ 59	+ 37
120	180	0	- 25	0	- 18	+ 14	- 11	+ 28	+ 3	+ 21	+ 3	+ 40	+ 15	+ 33	+ 15	+ 52	+ 27	+ 68	+ 43
180	250	0	- 29	0	- 20	+ 16	- 13	+ 33	+ 4	+ 24	+ 4	+ 46	+ 17	+ 37	+ 17	+ 60	+ 31	+ 79	+ 50
250	315	0	- 32	0	- 23	+ 16	- 16	+ 36	+ 4	+ 27	+ 4	+ 53	+ 20	+ 43	+ 20	+ 66	+ 34	+ 88	+ 56
315	400	0	- 36	0	- 25	+ 18	- 18	+ 40	+ 4	+ 29	+ 4	+ 57	+ 21	+ 46	+ 21	+ 73	+ 37	+ 98	+ 62
400	500	0	- 40	0	- 27	+ 20	- 20	+ 45	+ 5	+ 32	+ 5	+ 63	+ 23	+ 50	+ 23	+ 80	+ 40	+ 108	+ 68
500	630	0	- 44	0	- 28	-	-	+ 44	0	-	-	+ 70	+ 26	-	-	+ 88	+ 44	+ 122	+ 78
630	800	0	- 50	0	- 32	-	-	+ 50	0	-	-	+ 80	+ 30	-	-	+ 100	+ 50	+ 138	+ 88



Bores

Nominal diameter of bore		D11		E8		E7		F8		F7		G7		H11		H9		H8		H7	
mm		μm		μm		μm		μm		μm		μm		μm		μm		μm		μm	
above	to	upper	lower	upper	lower	upper	lower	upper	lower	upper	lower	upper	lower	upper	lower	upper	lower	upper	lower	upper	lower
3	6	+ 105	+ 30	+ 38	+ 20	+ 32	+ 20	+ 28	+ 10	+ 22	+ 10	+ 16	+ 4	+ 75	0	+ 30	0	+ 18	0	+ 12	0
6	10	+ 130	+ 40	+ 47	+ 25	+ 40	+ 25	+ 35	+ 10	+ 28	+ 13	+ 20	+ 5	+ 90	0	+ 36	0	+ 22	0	+ 15	0
10	18	+ 160	+ 50	+ 59	+ 32	+ 50	+ 32	+ 43	+ 12	+ 34	+ 16	+ 24	+ 6	+ 110	0	+ 43	0	+ 27	0	+ 18	0
18	30	+ 195	+ 65	+ 73	+ 40	+ 61	+ 40	+ 53	+ 15	+ 41	+ 20	+ 28	+ 7	+ 130	0	+ 52	0	+ 33	0	+ 21	0
30	50	+ 240	+ 80	+ 89	+ 50	+ 75	+ 50	+ 64	+ 18	+ 50	+ 25	+ 34	+ 9	+ 160	0	+ 62	0	+ 39	0	+ 25	0
50	80	+ 290	+ 100	+ 106	+ 60	+ 90	+ 60	+ 76	+ 21	+ 60	+ 30	+ 40	+ 10	+ 190	0	+ 74	0	+ 46	0	+ 30	0
80	120	+ 340	+ 120	+ 126	+ 72	+ 107	+ 72	+ 90	+ 25	+ 71	+ 36	+ 47	+ 12	+ 220	0	+ 87	0	+ 54	0	+ 35	0
120	180	+ 395	+ 145	+ 148	+ 85	+ 125	+ 85	+ 106	+ 28	+ 83	+ 43	+ 54	+ 14	+ 250	0	+ 100	0	+ 63	0	+ 40	0
180	250	+ 460	+ 170	+ 172	+ 100	+ 146	+ 100	+ 122	+ 33	+ 96	+ 50	+ 61	+ 15	+ 290	0	+ 115	0	+ 72	0	+ 46	0
250	315	+ 510	+ 190	+ 191	+ 110	+ 162	+ 110	+ 137	+ 36	+ 108	+ 56	+ 69	+ 17	+ 320	0	+ 130	0	+ 81	0	+ 52	0
315	400	+ 570	+ 210	+ 214	+ 125	+ 182	+ 125	+ 151	+ 40	+ 119	+ 62	+ 75	+ 18	+ 360	0	+ 140	0	+ 89	0	+ 57	0
400	500	+ 630	+ 230	+ 232	+ 135	+ 198	+ 135	+ 165	+ 45	+ 131	+ 68	+ 83	+ 20	+ 400	0	+ 155	0	+ 97	0	+ 63	0
500	630	+ 700	+ 260	+ 255	+ 145	+ 215	+ 145	+ 186	+ 76	+ 146	+ 76	+ 92	+ 22	+ 440	0	+ 175	0	+ 110	0	+ 70	0
630	800	+ 790	+ 290	+ 285	+ 160	+ 240	+ 160	+ 205	+ 80	+ 160	+ 80	+ 104	+ 24	+ 500	0	+ 200	0	+ 125	0	+ 80	0

Nominal diameter of bore		H6		J7		J6		K7		K6		M7		M6		N7		N6		P7	
mm		μm		μm		μm		μm		μm		μm		μm		μm		μm		μm	
above	to	upper	lower	upper	lower	upper	lower	upper	lower	upper	lower	upper	lower	upper	lower	upper	lower	upper	lower	upper	lower
3	6	+ 8	0	+ 5	- 7	+ 4	- 4	-	-	-	-	0	- 12	- 1	- 9	- 4	- 16	- 5	- 13	- 8	- 20
6	10	+ 9	0	+ 8	+ 7	+ 5	- 4	+ 5	- 10	+ 2	- 7	0	- 15	- 3	- 12	- 4	- 19	- 7	- 16	- 9	- 24
10	18	+ 11	0	+ 10	- 8	+ 6	- 5	+ 6	- 12	+ 2	- 9	0	- 18	- 4	- 15	- 5	- 23	- 9	- 20	- 11	- 29
18	30	+ 13	0	+ 12	- 9	+ 8	- 5	+ 6	- 15	+ 2	- 11	0	- 21	- 4	- 17	- 7	- 28	- 11	- 24	- 14	- 35
30	50	+ 16	0	+ 14	- 11	+ 10	- 6	+ 7	- 18	+ 3	- 13	0	- 25	- 4	- 20	- 8	- 33	- 12	- 28	- 17	- 42
50	80	+ 19	0	+ 18	- 12	+ 13	- 6	+ 9	- 21	+ 4	- 15	0	- 30	- 5	- 24	- 9	- 39	- 14	- 33	- 21	- 51
80	120	+ 22	0	+ 22	- 13	+ 16	- 6	+ 10	- 25	+ 4	- 18	0	- 35	- 6	- 28	- 10	- 45	- 16	- 38	- 24	- 59
120	180	+ 25	0	+ 26	- 14	+ 18	- 7	+ 12	- 28	+ 4	- 21	0	- 40	- 8	- 33	- 12	- 52	- 20	- 45	- 28	- 68
180	250	+ 29	0	+ 30	- 16	+ 22	- 7	+ 13	- 33	+ 5	- 24	0	- 46	- 8	- 37	- 14	- 60	- 22	- 51	- 33	- 79
250	315	+ 32	0	+ 36	- 16	+ 25	- 7	+ 16	- 36	+ 5	- 27	0	- 52	- 9	- 41	- 14	- 66	- 25	- 57	- 36	- 88
315	400	+ 36	0	+ 39	- 18	+ 29	- 7	+ 17	- 40	+ 7	- 29	0	- 57	- 10	- 46	- 16	- 73	- 26	- 62	- 41	- 98
400	500	+ 40	0	+ 43	- 20	+ 33	- 7	+ 18	- 45	+ 8	- 32	0	- 63	- 10	- 50	- 17	- 80	- 27	- 67	- 45	- 108
500	630	+ 44	0	-	-	-	-	0	- 70	0	- 44	- 26	- 96	- 26	- 70	- 44	- 114	- 44	- 88	- 78	- 148
630	800	+ 50	0	-	-	-	-	0	- 80	0	- 50	- 30	- 110	- 30	- 80	- 50	- 130	- 50	- 100	- 88	- 168



Shrink Discs & Shrink Discs stainless steel **RINGFEDER®**

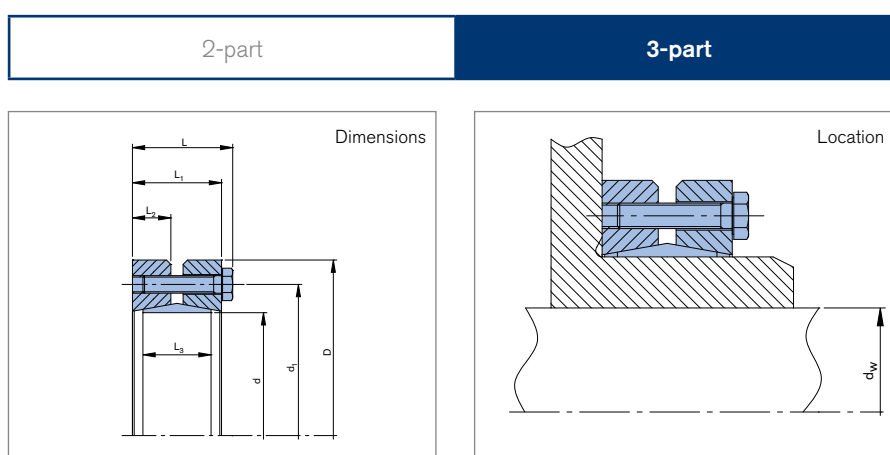
Tables & Values



Shrink Discs

RINGFEDER® RfN 4051

Lighter version for moderate transfer values – particularly suited for thin hubs and hollow shafts



Shrink Discs dimensions										Transmissible torques or axial forces				Locking screws				
d	x	D	d _w	d ₁	L	L ₁	L ₂	L ₃	L _B	T _A	T	F _{ax}	P	σ _v	n _{Sc}	Thread	Gw	T _{max}
mm			mm	mm	mm	mm	mm	mm		Nm	Nm	kN	N/mm ²	N/mm ²		mm	kg	Nm
125	x	185	95								10550	220		278				13200
			100	158	58	51	22	39	30,5	59	12100	240	191	280	8	M10	5,1	15125
			105								13800	260		288				17250
140	x	220	110								14800	265		268				18500
			120	175	58	51	22	39	30,85	59	18640	310	192	281	9	M10	8	23300
			125								20500	325		315				25625
155	x	245	130								24000	365		293				30000
			135	192	58	51	22	39	30,5	59	26400	390	212	306	11	M10	10	33000
			140								29000	410		334				36250
165	x	260	135								32000	475		298				40000
			140	210	70	62	26	46	36	100	35200	500	224	308	10	M12	14	44000
			145								38500	530		327				48125
175	x	275	145								39000	535		302				48750
			150	220	70	62	26	46	36	100	42400	560	232	313	11	M12	14,7	53000
			155								46000	590		334				57500
185	x	295	155								46600	600		307				58250
			160	225	70	62	26	46	36	100	50300	625	240	319	12	M12	17,2	62875
			165								54000	650		341				67500
195	x	315	165								63000	760		306				78750
			170	237	80	72	31	56	41	100	67700	795	233	323	15	M12	23,8	84625
			175								72500	825		355				90625
200	x	330	175								74000	850		334				92500
			180	242	80	72	31	56	41	100	79500	890	243	368	16	M12	26,8	99375
			185								84500	915		440				105625

To continue see next page

Shrink Discs RINGFEDER® RfN 4051

Shrink Discs dimensions										Transmissible torques or axial forces				Locking screws				
d	x	D	d _w	d ₁	L	L ₁	L ₂	L ₃	L _B	T _A	T	F _{ax}	P	σ _v	n _{sc}	Thread	G _w	T _{max}
mm			mm	mm	mm	mm	mm	mm	mm	Nm	Nm	kN	N/mm ²	N/mm ²		mm	kg	Nm
220	x	345	180	265	94	84	36	66	47	250	82800	920	220	277	10	M16	32	103500
			190								93500	980		306				116875
			200								105000	1055		367				131250
240	x	370	200	290	94	84	36	66	47	250	113000	1135	243	304	12	M16	36	141250
			210								127500	1210		330				159375
			215								134500	1250		356				168125
260	x	395	220	310	102	92	40	72	52,5	250	149000	1350	240	303	14	M16	48	186250
			230								165000	1435		334				206250
			235								173000	1475		364				216250
280	x	425	230	333	114	104	46	84	59,5	250	171000	1485	218	270	16	M16	60	213750
			240								189000	1570		287				236250
			250								208000	1660		324				260000
300	x	460	250	358	114	104	46	84	59,5	250	215000	1720	229	279	18	M16	70	268750
			260								234000	1800		303				292500
			270								255000	1890		342				318750
320	x	495	270	378	116	106	48	84	60,5	250	260000	1940	239	293	20	M16	84	325000
			280								284000	2030		313				355000
			290								306000	2125		355				382500
340	x	535	290	402	116	106	48	84	60,5	250	300000	2070	236	288	21	M16	100	375000
			300								324000	2160		309				405000
			305								337000	2210		326				421250
350	x	545	300	413	135	122	54	100	68,5	490	372000	2485	230	292	16	M20	120	465000
			305								385000	2540		304				481250
			310								400000	2590		320				500000
360	x	555	300	423	135	122	54	100	68,5	490	360000	2400	223	270	16	M20	125	450000
			310								388000	2500		284				485000
			320								415000	2590		314				518750
380	x	585	320	442	149	136	60	112	75,5	490	435000	2720	213	268	18	M20	150	543750
			325								451000	2780		275				563750
			330								467000	2835		285				583750
390	x	595	330	452	149	136	60	112	78	490	505000	3060	230	285	20	M20	156	631250
			340								540000	3175		304				675000
			350								577000	3295		337				721250
400	x	615	340	462	149	136	60	112	78	490	550000	3235	236	291	21	M20	164	687500
			350								587000	3360		311				733750
			360								626000	3480		345				782500
420	x	630	350	485	157	144	64	120	82	490	578000	3300	219	265	22	M20	185	722500
			360								617000	3425		277				771250
			370								655000	3545		297				818750
440	x	660	370	505	157	144	64	120	82	490	677000	3660	229	274	24	M20	205	846250
			380								719000	3785		287				898750
			390								762000	3910		309				952500
460	x	685	390	527	171	158	71	132	91,5	490	840000	4320	232	283	28	M20	235	1050000
			400								890000	4460		299				1112500
			410								935000	4580		328				1170000

To continue see next page

Shrink Discs RINGFEDER® RfN 4051

Shrink Discs dimensions										Transmissible torques or axial forces				Locking screws				
d	x	D	d _w	d ₁	L	L ₁	L ₂	L ₃	L _B	T _A	T	F _{ax}	P	σ _v	n _{Sc}	Thread	G _w	T _{max}
mm			mm	mm	mm	mm	mm	mm	mm	Nm	Nm	kN	N/mm ²	N/mm ²		mm	kg	Nm
480	x	715	410								891000	4350		275				1113750
			420	547	171	158	71	132	91,5	490	941000	4480	222	290	28	M20	255	1176250
			425								966000	4548		301				1207500
500	x	750	425								986000	4645		275				1232500
			430	567	171	158	71	132	91,5	490	1013000	4712	228	281	30	M20	285	1266250
			440								1066000	4845		297				1332500

More sizes on request

Explanation

d = Inner diameter	L₂ = Thrust ring width	P = Hub surface pressure
D = Outer diameter	L₃ = Width of ring	σ_v = Equivalent stress in the hub
d_w = Solid shaft diameter	L_B = Width of the half Shrink Disc	n_{sc} = Quantity of screws
d₁ = Pitch circle diameter	T_A = Tightening torque of the clamping screws	D_G = Thread
L = Overall length	T = Transmissible torque at given T _A	Gw = Weight
L₁ = Overall length (without screws)	F_{ax} = Transmissible axial force	T_{max} = Max. transmissible torque

Ordering example

Series	d	D
RfN 4051	420	630

Table Clearance

d _w		ISO	Max. clearance S
above	up to		mm
6	10	H6/j6	0,011
10	18		0,014
18	30		0,017
30	50	H6/h6	0,032
50	80	H7/g6	0,048
80	120		0,069
120	180		0,079
180	250		0,090
250	315		0,101
315	400		0,111
400	500		0,123
500	630		0,136
630	800		0,154

Clearances considered for the calculation of the function values

Technical information

- Surface finishes: For shaft $R_a \leq 3,2 \mu\text{m}$
- Tolerances: For shaft see table
- When using a hollow shaft instead of a solid shaft please contact our Engineering-Team.
- 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 MoS₂ ($\mu_{\text{tot}} = 0,1$). The tapered cones are lubricated using MoS₂ ($\mu = 0,05$). 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 210,000 N/mm². (Lower values result in increased values for T and Fax with reduced tangential stress.) The maximum clearance S 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.

Further information on
RINGFEDER® RfN 4051
 on www.ringfeder.com

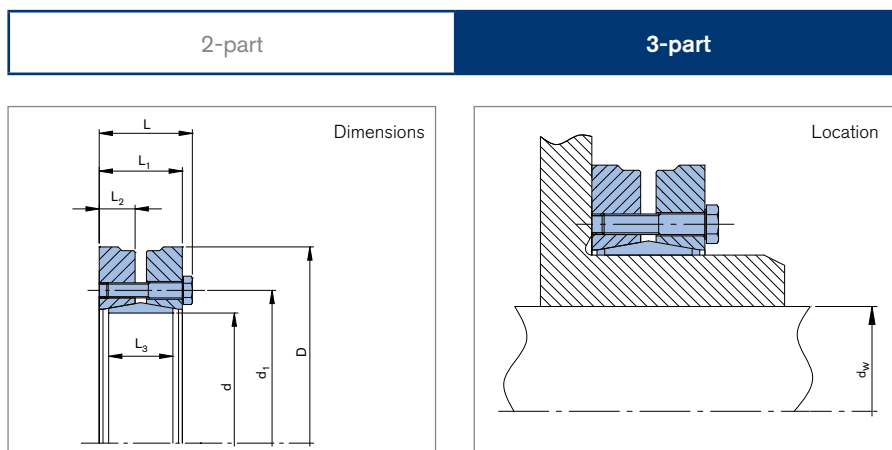
Disclaimer of liability

All technical details and notes are non-binding and cannot be used as a basis for legal claims. The user is obligated to determine whether the represented products meet his requirements. We reserve the right carry out modifications at any time in the interests of technical progress.

Shrink Discs

RINGFEDER® RfN 4061

Standard series for high torque



Shrink Discs dimensions										Transmissible torques or axial forces				Locking screws				
d	x	D	d _w	d ₁	L	L ₁	L ₂	L ₃	L _B	T _A	T	F _{ax}	P	σ _v	ISO 4014/4017 - 10.9 n _{Sc}	D _G	G _w	T _{max}
mm			mm	mm	mm	mm	mm	mm	mm	Nm	Nm	kN	N/mm ²	N/mm ²		mm	kg	Nm
14	x	37	10								30	8		415				37,5
			11	24	14,8	12	5	9	9,5	2,4	37	8	278	474	3	M4 ¹⁾	0,1	46
			12								48	10		557				60
16	x	41	12								70	15		509				90
			13	27	18,5	15	6,25	12	9,5	4	90	18	336	575	4	M5	0,1	110
			14								110	20		774				130
18	x	44	14								90	16		459				110
			15	29	18,5	15	6,25	12	9,5	4	100	18	299	523	4	M5	0,2	130
			16								120	20		705				160
20	x	46	15								110	20		462				140
			16	32	21	17,5	7	12	11,5	4	140	22	336	497	5	M5	0,2	170
			17								160	24		580				200
21	x	50	16								200	31		534				250
			17	36	22,5	19	8	15	11,8	5	230	34	384	602	6	M5	0,2	290
			18								260	37		746				330
24	x	50	19								240	32		495				300
			20	36	22,5	19	8	15	11,8	5	270	35	336	554	6	M5	0,2	340
			21								300	38		679				390
30	x	52	24								350	38		390				450
			25	41,5	26	22,5	9,5	18	12,8	5	400	41	261	426	7	M5	0,2	500
			26								440	43		492				560
36	x	72	28								590	53		390				730
			30	52	27,5	23,5	10	18	13,8	12	690	58	303	438	5	M6	0,5	860
			31								700	58		536				890

¹⁾ Different quality of screws. ISO 4014/4017 - 8.8

To continue see next page

Shrink Discs RINGFEDER® RfN 4061

Shrink Discs dimensions										Transmissible torques or axial forces				Locking screws				
d	x	D	d _w	d _i	L	L ₁	L ₂	L ₃	L _B	T _A	T	F _{ax}	P	σ _v	n _{Sc}	D _G	G _w	T _{max}
mm			mm	mm	mm	mm	mm	mm	mm	Nm	Nm	kN	N/mm ²	N/mm ²		mm	kg	Nm
38 x 72		29									700	62						890
		30	55	30	26	10,5	21	15,2	12		770	65	295	394	6	M6	0,5	970
		31									780	63		474				980
40 x 72		30									720	61		375				900
		31	57	28,5	24,5	10,5	19	14,8	12		730	59	310	450	6	M6	0,5	910
		32									790	62		460				990
44 x 80		32									800	63		429				1000
		35	63	30	26	11	20	15,3	12		1000	73	312	444	7	M6	0,5	1250
		36									1050	76		458				1350
48 x 80		36									900	65		371				1150
		38	68	30	26	11	22	15,8	12		1050	72	260	380	7	M6	0,6	1350
		40									1200	78		403				1550
50 x 90		38									1350	89		418				1650
		40	70	31,5	27,5	12	22,5	16,3	12		1500	96	314	433	9	M6	0,9	1900
		42									1700	103		467				2150
55 x 100		42									1300	78		343				1600
		45	75	34,5	30,5	13	23	17,8	12		1550	87	248	359	8	M6	1,1	1950
		48									1800	96		410				2300
62 x 110		48									2400	126		407				3000
		50	86	34,5	30,5	13	23	17,8	12		2650	133	330	419	12	M6	1,3	3300
		52									2800	136		482				3500
68 x 115		50									1900	95		314				2350
		55	86	34,5	30,5	13	23,5	17,8	12		2250	104	245	367	10	M6	1,4	2850
		60									2850	121		411				3600
75 x 138		55									2650	121		377				3300
		60	100	37,8	32,5	14	25	19,7	30		3300	139	277	382	7	M8	2,3	4150
		65									4050	158		416				5100
80 x 145		60									3200	126		353				4000
		65	100	37,8	32,5	14	25	19,7	30		3900	143	259	358	7	M8	2,5	4900
		70									4600	160		392				5750
85 x 155		60									4850	189		404				6050
		65	114	45,8	40,5	16	30	23	30		5800	212	325	407	11	M8	3,5	7250
		70									6800	235		427				8500
90 x 155		65									4800	174		353				6000
		70	114	44,5	39	17	30	23	30		6050	195	274	356	10	M8	3,3	7550
		75									7300	215		372				9150
95 x 170		65									5350	195		349				6700
		70	127	52,5	47,2	19	34	23,5	30		6750	217	275	349	12	M8	4,7	8450
		75									8150	240		355				10200
100 x 170		70									6950	202		331				8700
		75	127	52,5	47,2	19	34	25,5	30		7600	223	261	331	12	M8	4,5	9500
		80									9100	245		338				11350
110 x 185		75									8150	259		316				10150
		80	145	59,4	53	23	42	28,5	59		10100	285	254	316	10	M10	6,3	12600
		85									12200	296		357				15250
115 x 185		80									9500	267		302				11850
		90	145	62,4	56	23	42	32	59		12100	302	243	342	10	M10	6,1	15100
		95									14050	329		353				17550

To continue see next page

Shrink Discs RINGFEDER® RfN 4061

Shrink Discs dimensions									Transmissible torques or axial forces		P	σ _V	Locking screws		G _w	T _{max}
d x D	d _w	d ₁	L	L ₁	L ₂	L ₃	L _B	T _A	T	F _{ax}			ISO 4014/4017 - 10.9	D _G		
mm	mm	mm	mm	mm	mm	mm	mm	Nm	Nm	kN	N/mm ²	N/mm ²	n _{Sc}	mm	kg	Nm
125 x 215	85								11050	300		354				13800
	90	160	60,4	54	23	42	32	59	13100	327	269	352	12	M10	8,7	16350
	95								15150	355		352				18950
140 x 230	95								15100	365		336				18850
	100	175	68	60,5	26	46	35,5	100	17550	395	263	335	10	M12	10,6	21900
	105								20000	424		335				25000
155 x 265	105								22000	447		320				27500
	110	192	72,5	64,5	28	50	37,2	100	25000	478	263	320	12	M12	15	31250
	115								28000	509		322				35000
165 x 290	115								31400	601		334				39300
	120	210	81	71	31	56	40,5	250	35500	637	280	335	8	M16	21,7	44400
	125								39400	664		348				49250
175 x 300	125								36000	605		334				45000
	130	220	81	71	31	56	40,5	250	41000	639	261	321	8	M16	22	51250
	135								45000	675		324				56250
185 x 330	135								52500	786		307				65600
	140	236	96,4	86,4	38,2	71	48	250	57350	828	246	310	10	M16	36	71650
	145								62400	870		314				78000
195 x 350	140								65950	943		332				82450
	150	246	96	86	38,2	71	48	250	77600	1035	280	338	12	M16	40	97000
	155								83750	1081		345				104700
200 x 350	150								75000	1000		326				93750
	155	246	96	86	38,2	71	48	250	81000	1045	273	330	12	M16	39	101200
	160								87200	1091		337				109000

More sizes on request
To continue see next page

Shrink Discs RINGFEDER® RfN 4061

Explanation

d = Inner diameter	L₃ = Width of ring	σ_v = Equivalent stress in the hub
D = Outer diameter	L_B = Width of the half Shrink Disc	n_{Sc} = Quantity of screws
d_w = Solid shaft diameter	T_A = Tightening torque of the clamping screws	D_G = Thread
d₁ = Pitch circle diameter	T = Transmissible torque at given T _A	G_w = Weight
L₁ = Overall length (without screws)	F_{ax} = Transmissible axial force	T_{max} = Max. transmissible torque
L₂ = Thrust ring width	P = Hub surface pressure	

Ordering example

Series	d	D	Version
RfN 4061	185	330	
RfN 4061	185	330	N

N = Nickel plated series

Table Clearance

d _w		ISO	Max. clearance S
above	up to		mm
6	10	H6/j6	0,011
10	18		0,014
18	30		0,017
30	50	H6/h6	0,032
50	80	H6/g6	0,048
80	120	H7/g6	0,069
120	180		0,079
180	250		0,090
250	315		0,101
315	400		0,111
400	500		0,123
500	630		0,136
630	800		0,154

Clearances considered for the calculation of the function values

Technical information

- Surface finishes: For shaft $R_a \leq 3,2 \mu\text{m}$
- Tolerances: For shaft see table
- When using a hollow shaft instead of a solid shaft please contact our Engineering-Team.
- 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 MoS₂ ($\mu_{\text{tot}} = 0,1$). The tapered cones are lubricated using MoS₂ ($\mu = 0,05$). 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 210,000 N/mm². (Lower values result in increased values for T and Fax with reduced tangential stress.) The maximum clearance S 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.

Further information on
RINGFEDER® RfN 4061 on
www.ringfeder.com

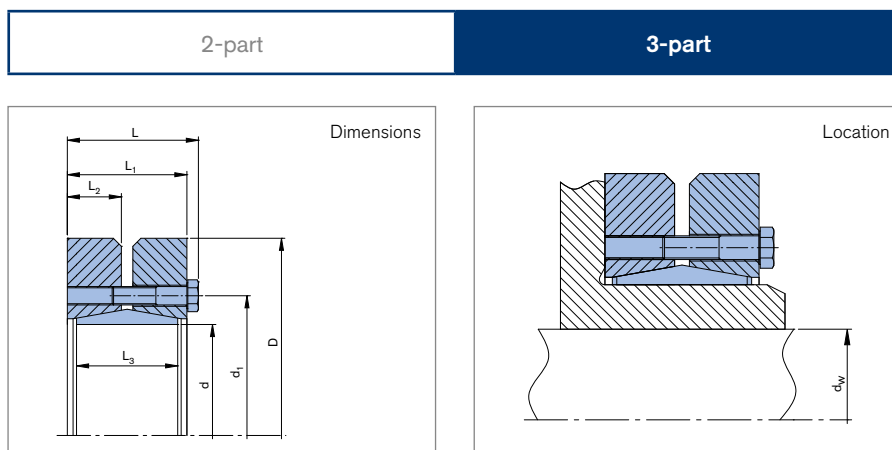
Disclaimer of liability

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Shrink Discs

RINGFEDER® RfN 4071

Standard series for high torque



Shrink Discs dimensions										Transmissible torques or axial forces		P	σ_v	Locking screws		Gw	T_{max}
d	x	D	d _w	d ₁	L	L ₁	L ₂	L ₃	L _B	T _A	T	F _{ax}		n _{Sc}	D _G		
mm			mm	mm	mm	mm	mm	mm	mm	Nm	Nm	kN	N/mm ²	Stück	mm	kg	Nm
220	x	370	160								95000	1190					118750
			165	270	114	104	47	88	59,5	250	102000	1239	248	15	M16	54	127500
			170								110000	1290					137500
240	x	405	170								120000	1464					150000
			180	295	122	109	49	92	62	490	138000	1576	272	12	M20	67	172500
			190								156000	1675					195000
260	x	430	190								164000	1760					205000
			200	321	133	120	54	103	67,5	490	184000	1880	262	14	M20	82	230000
			210								205000	2010					256250
280	x	460	210								217000	2090					271250
			220	346	147	134	60	114	76,5	490	244000	2220	251	16	M20	102	305000
			230								270000	2350					337500
300	x	485	230								275000	2431					343750
			240	364	155	142	64	122	79,5	490	295000	2567	246	18	M20	118	368750
			245								315000	2636					393750
320	x	520	240								312000	2647					390000
			250	386	155	142	64	122	79,5	490	340000	2786	257	20	M20	131	425000
			260								374000	2900					467500
340	x	570	250								390000	3119					487500
			260	408	169	156	71	134	86,5	490	422500	3249	264	24	M20	186	528125
			270								460000	3400					575000
350	x	580	270								442000	3276					552500
			280	432	175	162	73	140	89,5	490	480000	3430	245	24	M20	195	600000
			285								500000	3500					625000

To continue see next page

Shrink Discs RINGFEDER® RfN 4071

Shrink Discs dimensions											Transmissible torques or axial forces				Locking screws				
d	x	D	d _w	d ₁	L	L ₁	L ₂	L ₃	L _B	T _A	T	F _{ax}	P	σ _v	n _{Sc}	D _G	G _w	T _{max}	
mm			mm	mm	mm	mm	mm	mm		Nm	Nm	kN	N/mm ²	N/mm ²	Stück	mm	kg	Nm	
360	x	590	280	432	175	162	73	140	89,5	490	463000	3310	238	282	24	M20	204	578750	
			290								502000	3461						292	627500
			295								522000	3536						298	652500
380	x	645	290	458	183	168	76	144	92,5	840	567000	3910	263	300	20	M24	239	708750	
			300								610000	4080						307	762500
			310								658000	4248						320	822500
390	x	660	300	468	183	168	76	144	92,5	840	624000	4160	270	305	21	M24	260	780000	
			310								671000	4330						314	838750
			320								718000	4484						331	897500
400	x	680	315	480	183	168	76	144	92,5	840	670000	4260	263	302	21	M24	280	837500	
			320								695000	4345						310	868750
			330								744000	4500						324	930000
420	x	690	330	504	203	188	86	164	106,5	840	780000	4850	251	295	24	M24	316	975000	
			340								840000	5040						306	1050000
			350								900000	5220						322	1125000
440	x	750	340	527	217	202	91	177	113,5	840	806000	4740	223	267	24	M24	408	1007500	
			350								860000	4910						274	1075000
			360								917000	5090						285	1146250
460	x	770	360	547	217	202	91	177	113,5	840	1000000	5670	248	293	28	M24	420	1250000	
			370								1070000	5860						301	1337500
			380								1400000	6050						314	1750000
480	x	800	380	570	228	213	96	188	119	840	1170000	6150	240	282	30	M24	505	1462500	
			390								1240000	6350						292	1550000
			400								1310000	6550						306	1637500
500	x	850	400	590	230	213	96	188	119	1250	1312000	6560	242	284	24	M27	575	1640000	
			410								1380000	6730						297	1725000
			420								1455000	6930						311	1818750

More sizes on request
To continue see next page

Shrink Discs RINGFEDER® RfN 4071

Explanation

d = Inner diameter	L₂ = Thrust ring width	P = Hub surface pressure
D = Outer diameter	L₃ = Width of ring	σ_v = Equivalent stress in the hub
d_w = Solid shaft diameter	L_B = Width of the half Shrink Disc	n_{Sc} = Quantity of screws
d₁ = Pitch circle diameter	T_A = Max tightened torque of the clamping screws	D_G = Thread
L = Overall length	T = Transmissible torque at given T _A	Gw = Weight
L₁ = Overall length (without screws)	F_{ax} = Transmissible axial force	T_{max} = Max. transmissible torque

Ordering example

Series	d	D
RfN 4071	420	520

Table Clearance

d _w		ISO	Max. clearance S
above	up to		mm
6	10	H6/j6	0,011
10	18		0,014
18	30		0,017
30	50	H6/h6	0,032
50	80	H6/g6	0,048
80	120	H7/g6	0,069
120	180		0,079
180	250		0,090
250	315		0,101
315	400		0,111
400	500		0,123
500	630		0,136
630	800		0,154

Technical information

- Surface finishes: For shaft $R_a \leq 3,2 \mu\text{m}$
- Tolerances: For shaft see table
- When using a hollow shaft instead of a solid shaft please contact our Engineering-Team.
- 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 MoS₂ ($\mu_{\text{tot}} = 0,1$). The tapered cones are lubricated using MoS₂ ($\mu = 0,05$). 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 210,000 N/mm². (Lower values result in increased values for T and Fax with reduced tangential stress.) The maximum clearance S 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.

Clearances considered for the calculation of the function values

Further information on
RINGFEDER® RfN 4071 on
www.ringfeder.com

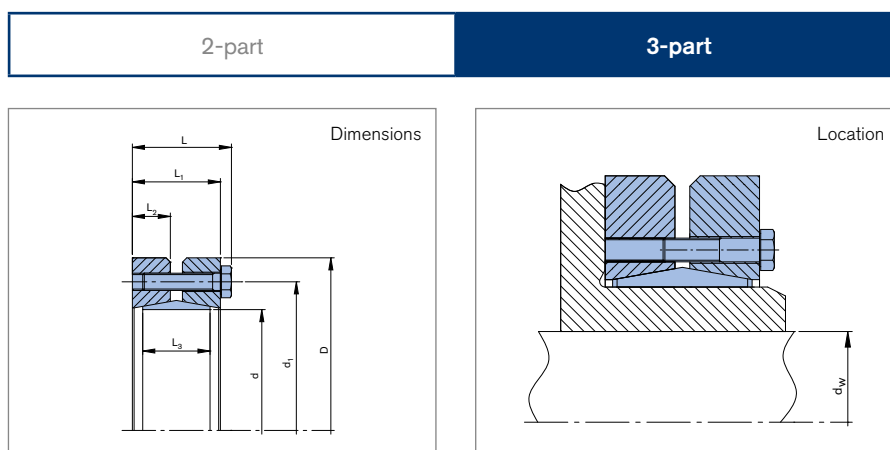
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Shrink Discs

RINGFEDER® RfN 4073

Mini series for particularly light applications



Shrink Discs dimensions										Transmissible torques or axial forces				Locking screws			
d	x	D	d _w	d ₁	L	L ₁	L ₂	L ₃	T _A	T	F _{ax}	P	σ _v	n _{Sc}	D _G	G _w	T _{max}
mm			mm	mm	mm	mm	mm	mm	Nm	Nm	kN	N/mm ²	N/mm ²	Stück	mm	kg	Nm
14	x	34	9	24	14	12	5,0	9	2,4	9	2,5	222	389	3	M4 ¹⁾	0,1	18
			10							14	3,5		372				26
			11							20	4,6		361				35
16	x	42	11	30	14,8	12	5,0	9	2,4	32	7,2	264	408	4	M4 ¹⁾	0,1	40
			12							41	8,5		414				51
			13							52	9,9		440				64
20	x	47	14	34	17,5	14	6,0	10	3	41	7,3	193	310	4	M5	0,13	51
			15							51	8,4		311				64
			16							62	9,6		320				78
22	x	50	16	37	18,5	15	6,5	10	3	68	10,5	219	320	5	M5	0,16	85
			17							80	11,5		326				100
			18							94	13,0		341				118
24	x	50	18	39	18,5	15	6,5	10	5	185	26,0	274	503	5	M5	0,16	231
			19							205	28,0		543				256
			20							235	30,0		581				293
28	x	56	20	43	18,5	15	6,5	10	3	77	9,6	172	270	5	M5	0,18	96
			22							103	11,5		271				129
			24							132	13,5		289				165
31	x	60	24	46	18,5	15	6,5	10	3	110	11,0	156	244	5	M5	0,2	138
			25							123	12,0		246				154
			27							154	14,0		264				193
36	x	66	28	52	18,5	15	6,5	10	3	161	14,0	161	233	6	M5	0,24	201
			30							194	16,0		239				243
			32							215	16,5		328				269

¹⁾ Different quality of screws. ISO 4014/4017 - 8.8

To continue see next page

Shrink Discs RINGFEDER® RfN 4073

Shrink Discs dimensions										Transmissible torques or axial forces				Locking screws			
d	x	D	d _w	d ₁	L	L ₁	L ₂	L ₃	T _A	T	F _{ax}	P	σ _v	n _{Sc}	D _G	G _w	T _{max}
mm			mm	mm	mm	mm	mm	mm	Nm	Nm	kN	N/mm ²	N/mm ²	Stück	mm	kg	Nm
40	x	68	33	55	18,5	15	6,5	10	4	265	20,0	194	325	6	M5	0,23	331
			34							290	21,0		329				363
			35							320	22,5		336				396
46	x	80	38	63	22,5	19	8,0	14	4	400	26,0	160	278	8	M5	0,44	503
			40							470	29,0		288				589
			42							550	32,5		326				683
51	x	86	42	68,5	22,5	19	8,0	14	4	440	26,0	144	249	8	M5	0,49	550
			44							510	28,5		255				640
			45							550	30,0		261				680
56	x	91	46	73	22,5	19	8,0	14	4	560	30,0	148	241	9	M5	0,52	690
			48							630	32,5		245				790
			50							710	35,0		258				890
61	x	96	52	77	22,5	19	8,0	14	4	710	34,0	151	285	10	M5	0,56	890
			54							810	37,0		291				1010
			56							910	40,0		309				1130
66	x	100	58	82	22,5	19	8,0	14	4	850	36,5	140	266	10	M5	0,57	1070
			60							950	39,5		276				1190
			62							1060	42,5		308				1320
70	x	110	62	90	27,5	24	10,0	18	6	1410	56,5	153	279	10	M5	0,93	1770
			64							1560	60,5		300				1950
			65							1630	62,5		322				2040
75	x	114	66	93	27,5	24	10,0	18	6	1480	55,0	142	256	10	M5	0,93	1840
			68							1620	59,0		268				2020
			70							1770	63,0		301				2210
80	x	120	71	101	27,5	24	10,0	18	6	2000	70,0	161	269	12	M5	1,04	2500
			73							2160	74,0		285				2700
			75							2330	77,5		329				2920
85	x	128	76	105	32	28	11,5	22	12	2370	77,5	137	246	8	M6	1,41	2960
			78							2560	82,0		266				3200
			80							2760	86,0		316				3450
94	x	140	82	119	32	28	11,5	22	12	2300	69,5	124	253	8	M6	1,66	2870
			85							2600	76,0		262				3250
			88							2920	83,0		289				3660
105	x	150	92	128	32	28	11,5	22	12	3000	81,0	125	239	9	M6	1,77	3750
			95							3330	87,0		246				4160
			98							3680	93,5		266				4600
112	x	158	100	135	32	28	11,5	22	12	3390	84,5	117	225	9	M6	1,91	4240
			104							3850	92,5		241				3570
			106							4100	96,0		264				5120
120	x	164	106	141	36	32	13,0	25	12	3900	91,5	107	208	10	M6	2,2	4870
			110							4400	100,0		217				5500
			112							4670	104,0		230				5830
130	x	172	115	151	36	32	13,0	25	12	4250	99,0	99	191	10	M6	2,21	5320
			120							4890	101,5		202				6110
			122							5100	104,0		225				6380
140	x	182	125	161	36	32	13,0	25	12	5690	135,0	110	208	12	M6	2,4	7110
			128							6140	119,5		213				7670
			130							6450	124,0		220				8060

To continue see next page

Shrink Discs RINGFEDER® RfN 4073

Shrink Discs dimensions										Transmissible torques or axial forces				Locking screws			
d	x	D	d _w	d ₁	L	L ₁	L ₂	L ₃	T _A	T	F _{ax}	P	σ _v	ISO 4014/4017 - 10.9 n _{Sc}	D _G	G _w	T _{max}
mm			mm	mm	mm	mm	mm	mm	Nm	Nm	kN	N/mm ²	N/mm ²	Stück	mm	kg	Nm
150	x	194	135	171	36	32	13,0	25	12	6280	116,0	103	194	12	M6	2,7	7840
			138							6730	121,0		200				8420
			140							7050	125,0		206				8810
160	x	204	142	181	36	32	13,0	25	12	6360	111,0	96	179	12	M6	2,8	7940
			145							6800	117,0		182				8500
			148							7260	122,0		187				9070

More sizes on request
To continue see next page

Shrink Discs RINGFEDER® RfN 4073

Explanation

d = Inner diameter	L₂ = Thrust ring width	P = Hub surface pressure
D = Outer diameter	L₃ = Width of ring	σ_v = Equivalent stress in the hub
d_w = Solid shaft diameter	L_B = Width of the half Shrink Disc	n_{sc} = Quantity of screws
d₁ = Pitch circle diameter	T_A = Max tightened torque of the clamping screws	D_G = Thread
L = Overall length	T = Transmissible torque at given T _A	Gw = Weight
L₁ = Overall length (without screws)	F_{ax} = Transmissible axial force	T_{max} = Max. transmissible torque

Ordering example

Series	d	D
RfN 4073	46	80

Table Clearance

d _w		ISO	Max. clearance S
above	up to		mm
6	10	H6/j6	0,011
10	18		0,014
18	30		0,017
30	50	H6/h6	0,032
50	80	H6/g6	0,048
80	120	H7/g6	0,069
120	180		0,079
180	250		0,090
250	315		0,101
315	400		0,111
400	500		0,123
500	630		0,136
630	800		0,154

Clearances considered for the calculation of the function values

Technical information

- Surface finishes: For shaft $R_a \leq 3,2 \mu\text{m}$
- Tolerances: For shaft see table
- When using a hollow shaft instead of a solid shaft please contact our Engineering-Team.
- 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 MoS₂ ($\mu_{\text{tot}} = 0,1$). The tapered cones are lubricated using MoS₂ ($\mu = 0,05$). 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 210,000 N/mm². (Lower values result in increased values for T and Fax with reduced tangential stress.) The maximum clearance S 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.

Further information on
RINGFEDER® RfN 4073 on
www.ringfeder.com

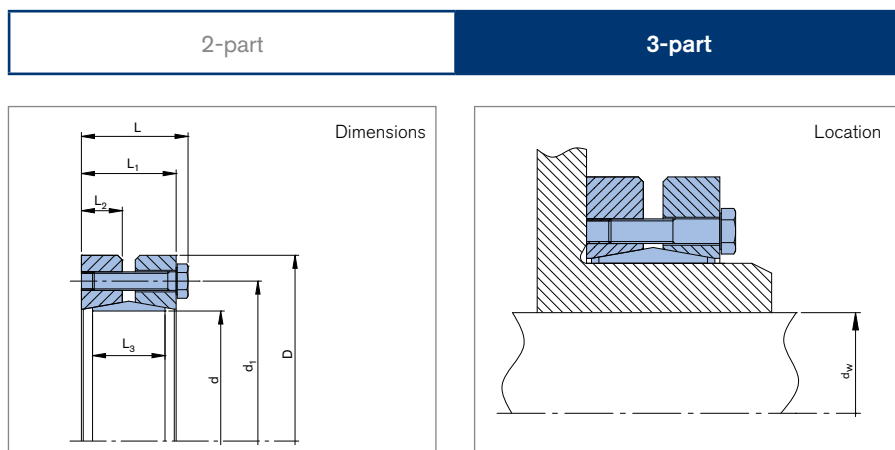
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Shrink Discs

RINGFEDER® RfN 4091

Heavy series for the highest torque



Shrink Discs dimensions										Transmissible torques or axial forces		P	σ_v	Locking screws		Gw	T_{max}
d	x	D	d_w	d_1	L	L_1	L_2	L_3	L_B	T_A	T	F_ax		ISO 4014/4017 - 10.9	D_G		
mm			mm	mm	mm	mm	mm	mm	mm	Nm	Nm	kN	N/mm ²	Stück	mm	kg	Nm
50	x	95	38	73	44,5	39	17	30	23	25	1800	106	285	7	M8	1,4	2250
			40								2100	115					2625
			42								2400	124					3000
55	x	105	42	78	44,5	39	17	30	23	28	2250	122	290	7	M8	1,7	2813
			45								2700	135					3375
			48								3200	148					4000
62	x	115	48	85	44,5	39	17	30	23	30	2950	134	276	7	M8	2	3688
			50								3400	142					4250
			52								3600	145					4500
68	x	118	50	93	49	44	19	34	27	30	3600	147	260	8	M8	2,1	4500
			55								4600	168					5750
			60								5700	190					7125
75	x	145	55	105	53	46	20	36	27	59	4600	193	302	7	M10	3,8	5750
			60								5700	221					7125
			65								7000	249					8750
80	x	145	60	105	53	46	20	36	27	59	5700	200	283	7	M10	3,6	7125
			65								7000	226					8750
			70								8400	253					10500
90	x	160	65	116	57	50	22	40	29	59	6700	217	259	8	M10	4,8	8375
			70								8100	243					10125
			75								9600	269					12000
100	x	170	70	126	61	54	23	44	32	59	8800	265	265	10	M10	5,6	11000
			75								10000	293					12500
			80								12200	321					15250

To continue see next page

Shrink Discs RINGFEDER® RfN 4091

Shrink Discs dimensions											Transmissible torques or axial forces				Locking screws			
d	x	D	d _w	d ₁	L	L ₁	L ₂	L ₃	L _B	T _A	T	F _{ax}	P	σ _v	n _{Sc}	D _G	G _w	T _{max}
mm			mm	mm	mm	mm	mm	mm	mm	Nm	Nm	kN	N/mm ²	N/mm ²	Stück	mm	kg	Nm
110	x	185	75	138	67	60	26	50	35	59	11000	308	254	316	12	M10	7,6	13750
			80								12900	338						16125
			85								14700	352						18375
125	x	215	85	160	73	65	28	55	37,5	100	15000	355	248	331	10	M12	11	18750
			90								17500	388						21875
			95								20000	422						25000
135	x	212	90	172	85	77	32	60	45	100	18800	420	251	330	12	M12	10,7	22500
			95								21600	456						27000
			105								27800	531						34750
140	x	300	90	220	106	96	42	80	54	250	36700	817	360	423	12	M16	35,5	45850
			100								47000	942						58750
			110								58700	1096						73350
155	x	263	105	197	91,5	84	35	66	45	100	28900	551	248	310	15	M12	19,6	36100
			110								32400	590						40500
			115								36200	630						45250
165	x	290	115	210	98	88	38	72	49	250	41000	740	270	324	10	M16	26	51250
			120								46000	785						57500
			125								50700	815						63375
175	x	300	125	220	124	114	50	92	59	250	72800	1165	301	367	15	M16	36,5	91000
			130								79900	1230						99850
			135								87300	1294						109100
185	x	330	135	236	122	112	50	92	61	250	72000	1100	263	327	14	M16	47	90000
			140								78000	1150						97500
			145								86000	1200						107500
190	x	350	135	239	129	116,5	50	92	62	470	95100	1409	331	386	12	M20	55	118850
			140								103400	1478						129250
			155								130600	1685						163250
195	x	350	140	246	122	112	50	92	63,5	250	75000	1075	250	310	14	M16	53	93750
			150								88000	1180						110000
			155								96000	1235						120000
200	x	350	145	246	122	112	50	92	63,5	250	85000	1170	261	317	15	M16	50	106250
			150								92500	1230						115625
			155								100000	1290						125000
220	x	370	160	270	144	134	60	114	74,5	250	127000	1590	255	309	20	M16	65	158750
			165								136000	1650						170000
			170								146500	1720						183125
240	x	405	170	295	157	144	65	120	79,5	490	155000	1820	261	305	15	M20	87	193750
			180								176000	1960						220000
			190								198000	2080						247500
260	x	430	190	321	173	160	72	136	87,5	490	213000	2260	255	308	18	M20	100	266250
			200								240000	2420						300000
			210								268000	2580						335000
280	x	460	210	346	185	172	78	148	96	490	285000	2740	254	310	21	M20	132	356250
			220								320000	2910						400000
			230								355000	3090						443750
300	x	485	230	364	189	176	80	152	98	490	341000	2960	242	298	22	M20	140	426250
			240								376000	3130						470000
			245								394000	3215						492500

To continue see next page

Shrink Discs RINGFEDER® RfN 4091

Shrink Discs dimensions										T _A	Transmissible torques or axial forces		P	σ _V	Locking screws		G _w	T _{max}	
d	x	D	d _w	d ₁	L	L ₁	L ₂	L ₃	L _B		T	F _{ax}			ISO 4014/4017 - 10.9	n _{Sc}			D _G
mm			mm	mm	mm	mm	mm	mm	mm		Nm	kN			N/mm ²	N/mm ²			Stück
320	x	520	240	386	196,5	184	82	160	102	490	378000	3150	235	282	24	M20	165	472500	
			250								415000	3325		294				518750	
			260								451000	3470		318				563750	
340	x	570	250	420	215	200	92	176	110	840	489500	3910	253	295	21	M24	240	611875	
			260								530000	4075		310				662500	
			270								578000	4275		326				722500	
350	x	580	270	425	215	200	92	176	110	840	556000	4122	247	304	21	M24	247	695000	
			280								604000	4320		320				755000	
			285								629000	4415		331				786250	
360	x	590	280	432	219	204	92	180	114,5	840	612000	4370	245	303	22	M24	250	765000	
			290								663000	4570		320				828750	
			295								689000	4670		332				861250	
380	x	645	290	458	219	204	92	180	114,5	840	618000	4270	233	279	22	M24	320	772500	
			300								668000	4455		290				835000	
			310								719000	4645		307				898750	
390	x	660	300	468	227	212	96	188	118,5	840	708000	4715	236	284	24	M24	350	885000	
			310								762000	4910		297				952500	
			320								814500	5090		318				1018125	
400	x	680	315	480	227	212	96	188	118,5	840	765000	4855	231	285	24	M24	370	956250	
			320								788000	4927		294				985000	
			330								845000	5125		312				1056250	
420	x	690	330	504	253	238	111	214	131,5	840	999000	6055	241	302	30	M24	410	1248750	
			340								1068000	6285		318				1335000	
			350								1140000	6515		342				1425000	
440	x	750	340	527	269	252	115	224	138,5	1250	1058000	6230	231	283	24	M27	540	1322500	
			350								1130000	6460		295				1412500	
			360								1204000	6690		312				1505000	
460	x	770	360	547	269	252	115	224	141	1250	1320000	7440	257	312	28	M27	540	1650000	
			370								1420000	7700		326				1775000	
			380								1500000	7950		346				1875000	
480	x	800	380	580	291	274	128	246	152	1250	1535000	8080	241	302	30	M27	650	1918750	
			390								1626000	8340		318				2032500	
			400								1720000	8600		340				2150000	
500	x	850	400	600	291	274	128	246	152	1250	1750000	8750	246	309	32	M27	750	2187500	
			410								1840000	8980		328				2300000	
			420								1940000	9250		350				2425000	

More sizes on request
To continue see next page

Shrink Discs RINGFEDER® RfN 4091

Explanation

d = Inner diameter	L₂ = Thrust ring width	P = Hub surface pressure
D = Outer diameter	L₃ = Width of ring	σ_v = Equivalent stress in the hub
d_w = Solid shaft diameter	L_B = Width of the half Shrink Disc	n_{sc} = Quantity of screws
d₁ = Pitch circle diameter	T_A = Max tightened torque of the clamping screws	D_G = Thread
L = Overall length	T = Transmissible torque at given T _A	Gw = Weight
L₁ = Overall length (without screws)	F_{ax} = Transmissible axial force	T_{max} = Max. transmissible torque

Ordering example

Series	d	D
RfN 4091	100	170

Table Clearance

d _w		ISO	Max. clearance S
above	up to		mm
6	10	H6/j6	0,011
10	18		0,014
18	30		0,017
30	50	H6/h6	0,032
50	80	H6/g6	0,048
80	120	H7/g6	0,069
120	180		0,079
180	250		0,090
250	315		0,101
315	400		0,111
400	500		0,123
500	630		0,136
630	800		0,154

Technical information

- Surface finishes: For shaft R_a ≤ 3,2 μm
- Tolerances: For shaft see table
- When using a hollow shaft instead of a solid shaft please contact our Engineering-Team.
- 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 MoS₂ (μ_{tot} = 0,1). The tapered cones are lubricated using MoS₂ (μ = 0,05). The contact surfaces (d_w) are in lightly oiled condition with coefficient of friction μ = 0,12. The hub and shaft materials have a modulus of elasticity of 210,000 N/mm². (Lower values result in increased values for T and Fax with reduced tangential stress.) The maximum clearance S 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.

Clearances considered for the calculation of the function values

Further information on
RINGFEDER® RfN 4091 on
www.ringfeder.com

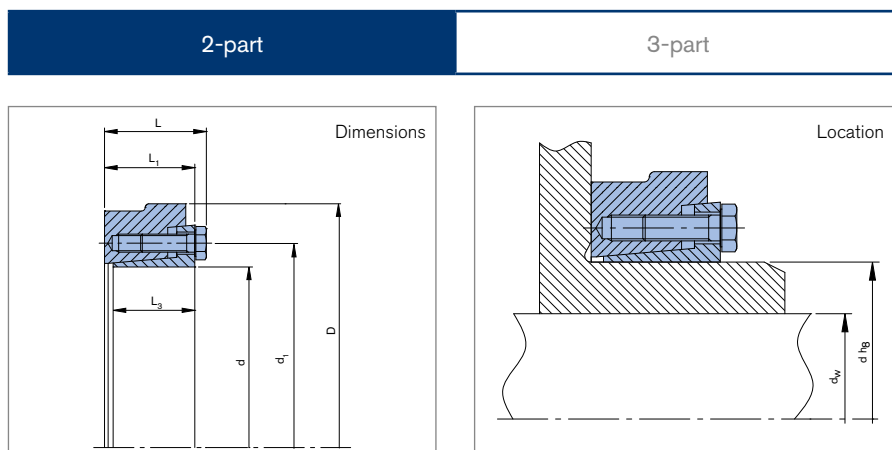
Disclaimer of liability

All technical details and notes are non-binding and cannot be used as a basis for legal claims. The user is obligated to determine whether the represented products meet his requirements. We reserve the right carry out modifications at any time in the interests of technical progress.

Shrink Discs

RINGFEDER® RfN 4161

Standard series for high torque



Shrink Discs dimensions							Transmissible torques or axial forces			Locking screws	Gw	T _{max}
d	x	D	d _w	d ₁	L	L ₁	L ₃	T _A	T	F _{ax}		
mm			mm	mm	mm	mm	mm	Nm	Nm	kN	mm	Nm
18	x	44	15	30	19	15	13	12	80	11	M6	88
			16						110	14		121
			---						---	---		---
20	x	47	17	32	19,3	15,3	13,5	12	150	18	M6	165
			18						180	20		198
			---						---	---		---
24	x	50	19	36	22	18	15	12	160	17	M6	176
			20						210	20		231
			22						280	25		308
26	x	51,5	20	38	22	18	16	12	230	23	M6	253
			22						300	27		330
			24						310	29		341
30	x	60	24	44	24	20	17	12	270	23	M6	297
			25						320	25		352
			26						360	28		396
36	x	72	27	52	27,3	22	18,5	35	510	37	M8	561
			30						710	47		781
			33						950	58		1045
38	x	72	27	54	27,3	22	18,5	35	480	36	M8	528
			30						650	43		715
			33						860	52		946
40	x	80	34	61	29,3	24	20,5	35	810	48	M8	891
			35						880	50		968
			37						960	52		1056

To continue see next page

Shrink Discs RINGFEDER® RfN 4161

Shrink Discs dimensions							T _A	Transmissible torques or axial forces		Locking screws	G _w	T _{max}
d	x	D	d _w	d ₁	L	L ₁		T	F _{ax}	ISO 4014/4017 - 12.9 D _G		
mm			mm	mm	mm	mm	Nm	Nm	kN	mm	kg	Nm
44	x	80	35	61	29,3	24	35	800	52	M8	0,6	880
			36					890	57			979
			37					1050	60			1155
50	x	90	38	68	31,3	26	35	1500	79	M8	0,8	1650
			40					1700	87			1870
			42					2000	94			2200
55	x	100	42	72	34,3	29	35	1600	78	M8	1,1	1760
			45					2000	88			2200
			48					2400	99			2640
60	x	110	48	80	34,3	29	35	2200	92	M8	1,3	2420
			50					2500	98			2750
			52					2700	105			2970
62	x	110	48	80	34,3	29	35	2200	92	M8	1,3	2420
			50					2500	98			2750
			52					2700	105			2970
68	x	115	50	86	34,3	29	35	2400	94	M8	1,4	2640
			55					3000	111			3300
			60					3800	128			4180
75	x	138	55	100	37,5	31	70	3700	135	M10	2,3	4070
			60					4700	156			5170
			65					5800	177			6380
80	x	141	60	104	37,5	31	70	4200	141	M10	2,3	4620
			65					5200	160			5720
			70					6300	180			6930
85	x	155	65	114	45	38	70	5900	186	M10	3,7	6490
			70					7200	204			7920
			75					8500	227			9350
90	x	155	65	114	45	38	70	5900	182	M10	3,5	6490
			70					7200	204			7920
			75					8500	227			9350
95	x	170	70	124	49,5	43	70	7400	213	M10	4,9	8140
			75					8900	236			9790
			80					10400	260			11440
100	x	185	80	139	56,5	49	121	15000	370	M12	6,7	16500
			85					17300	400			19030
			90					19600	430			21560
105	x	185	80	139	56,5	49	121	13900	348	M12	6,4	15290
			85					16100	380			17710
			90					18600	434			20460
110	x	185	80	139	56,5	49	121	15500	380	M12	6,1	17050
			85					17800	410			19580
			90					20000	440			22000
115	x	200	85	150	62,5	55	121	17200	405	M12	8	18920
			90					19900	443			21890
			95					22900	482			25190
120	x	200	85	150	62,5	55	121	17300	405	M12	7,7	18920
			90					19900	443			21890
			95					22900	482			25190

To continue see next page

Shrink Discs RINGFEDER® RfN 4161

Shrink Discs dimensions							T _A	Transmissible torques or axial forces		Locking screws ISO 4014/4017 - 12.9	G _w	T _{max}
d	x	D	d _w	d ₁	L	L ₁		T	F _{ax}	D _G		
mm			mm	mm	mm	mm	Nm	Nm	kN	mm	kg	Nm
125	x	215	90	157	60,5	53	121	19200	420	M12	9	21120
			95					21700	450			23870
			100					24400	480			26840
130	x	230	95	172	65,5	58	121	25900	540	M12	11,5	28490
			100					29000	580			31900
			110					36000	650			38600
135	x	230	95	172	67	58	190	21450	452	M14	11,1	23595
			100					24300	486			26730
			110					30500	555			33500
140	x	230	100	172	67	58	190	25300	500	M14	10,7	27830
			105					28000	530			30800
			115					35600	610			39160
150	x	263	110	190	71	62	190	37000	673	M14	16,3	40700
			120					45300	754			49830
			125					49700	795			54670
155	x	263	110	190	71	62	190	33000	600	M14	15,8	36300
			115					36600	637			40260
			120					40500	674			44550
160	x	290	120	200	78	68	290	57300	950	M16	22,3	63030
			130					66700	1020			73370
			135					72500	1070			79750
165	x	290	120	200	78	68	290	56500	940	M16	21,7	62150
			125					61500	980			67650
			135					72500	1070			79750
170	x	300	130	210	78,5	68,5	290	61000	938	M16	22,3	67100
			140					72300	1023			79530
			145					78400	1081			86240
175	x	300	130	210	78,5	68,5	290	61500	900	M16	21,7	67650
			135					67000	990			73700
			140					72500	1030			79750
180	x	320	140	224	97	87	290	86500	1237	M16	34	95150
			150					101400	1352			111540
			155					109300	1401			120230
185	x	320	140	224	97	87	290	96000	1250	M16	33,1	105600
			145					104000	1350			114400
			155					120000	1550			132000
190	x	320	150	238	96	86	290	92000	1250	M16	32	101200
			155					99000	1300			108900
			165					113500	1400			124850
195	x	340	150	238	95,5	85,5	290	103000	1374	M16	35	113300
			160					119300	1491			131230
			165					126100	1529			138710
200	x	340	150	238	95,5	85,5	290	108000	1450	M16	34	118800
			155					116000	1500			127600
			160					124000	1550			136400

More sizes on request
To continue see next page

Shrink Discs RINGFEDER® RfN 4161

Explanation

d = Inner diameter	L₁ = Overall length (without screws)	n_{Sc} = Quantity of screws
D = Outer diameter	L₃ = Width of ring	D_G = Thread
d_w = Solid shaft diameter	T_A = Max tightened torque of the clamping screws	G_w = Weight
d₁ = Pitch circle diameter	T = Transmissible torque at given T _A	T_{max} = Max. transmissible torque
L = Overall length	F_{ax} = Transmissible axial force	

Ordering example

Series	d	D
RfN 4161	150	263

Table Clearance

d _w		ISO	Max. clearance S
above	up to		mm
6	10	H6/j6	0,011
10	18		0,014
18	30		0,017
30	50	H6/h6	0,032
50	80	H6/g6	0,048
80	120	H7/g6	0,069
120	180		0,079
180	250		0,090
250	315		0,101
315	400		0,111
400	500		0,123
500	630		0,136
630	800		0,154

Clearances considered for the calculation of the function values

Technical information

- Surface finishes: For shaft $R_a \leq 3,2 \mu\text{m}$
- Tolerances: For shaft see table
- When using a hollow shaft instead of a solid shaft please contact our Engineering-Team.
- Hub with yield strength $R_{p0,2} \geq 360 \text{ N/mm}^2$
- 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 MoS₂ ($\mu_{tot} = 0,1$). The tapered cones are lubricated using MoS₂ ($\mu = 0,05$). 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 $210,000 \text{ N/mm}^2$. (Lower values result in increased values for T and Fax with reduced tangential stress.) The maximum clearance S 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.

Further information on
RINGFEDER® RfN 4161 on
www.ringfeder.com

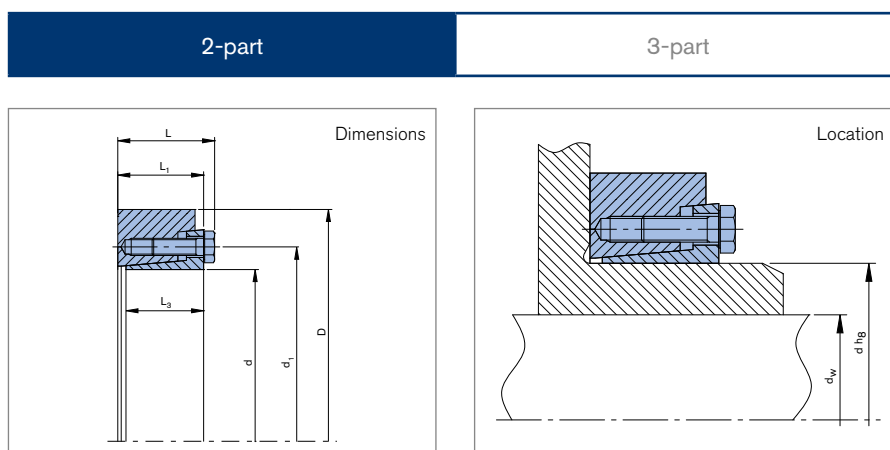
Disclaimer of liability

All technical details and notes are non-binding and cannot be used as a basis for legal claims. The user is obligated to determine whether the represented products meet his requirements. We reserve the right carry out modifications at any time in the interests of technical progress.

Shrink Discs

RINGFEDER® RfN 4181

Standard series for the highest torque



Shrink Discs dimensions								Transmissible torques or axial forces		Locking screws			
d	x	D	d _w	d ₁	L	L ₁	L ₃	T _A	T	F _{ax}	ISO 4014/4017 - 12.9 D _G	G _w	T _{max}
mm			mm	mm	mm	mm	mm	Nm	Nm	kN	mm	kg	Nm
220	x	370	160	270	115,8	103,3	87	570	160000	2000	M20	52,11	176000
			170						182000	2150			200200
			180						206000	2300			226600
240	x	405	170	296	121,4	108,9	92	570	190000	2250	M20	66,58	209000
			180						215000	2400			236500
			200						269000	2700			295900
260	x	430	190	318	128,4	115,9	102	580	247000	2600	M20	77,29	271700
			200						277000	2750			304700
			220						340000	3100			374000
280	x	460	210	340	146,4	133,9	121	570	282000	2686	M20	103,28	310200
			220						313000	2845			344300
			240						380000	3167			418000
300	x	485	220	360	154,1	139,1	122	980	385000	3500	M24	117,05	423500
			230						425000	3700			467500
			250						505000	4050			555500
320	x	520	240	380	156,6	141,6	124	980	444000	3700	M24	132,1	488400
			250						488000	3904			536800
			270						580000	4296			638000
340	x	570	250	402	167,5	152,5	135	980	564000	4500	M24	184,25	620400
			260						612000	4700			673200
			270						668000	4950			734800
360	x	590	270	424	182,7	167,7	150	980	658000	4850	M24	208,11	723800
			280						712000	5100			783200
			300						825000	5500			907500

To continue see next page

Shrink Discs RINGFEDER® RfN 4181

Shrink Discs dimensions							T _A	Transmissible torques or axial forces		Locking screws	G _w	T _{max}
d	x	D	d _w	d ₁	L	L ₁		T	F _{ax}	ISO 4014/4017 - 12.9 D _G		
mm			mm	mm	mm	mm	Nm	Nm	kN	mm	kg	Nm
380	x	640	290	444	185,1	168,1	1450	735000	5069	M27	247,5	808500
			300					790000	5266			869000
			310					845000	5452			929500
390	x	650	290	470	186,3	167,6	1900	903000	6250	M30	259,55	993300
			300					970000	6450			1067000
			320					1101000	6950			1221000
420	x	670	320	495	203,9	186,9	1450	969000	6056	M27	284,75	1065900
			330					1038000	6291			1141800
			350					1183000	6762			1301300
440	x	740	340	518	212,9	195,9	1450	1212000	7129	M27	398	1333200
			350					1292000	7383			1421200
			370					1460000	7892			1606000
480	x	790	380	552	243,7	225,0	1900	1815000	9552	M30	495,4	1996500
			390					1920000	9845			2112000
			410					2118000	10331			2329800
500	x	835	400	572	238,7	220,0	1900	2054000	10270	M30	626,3	2259400
			410					2145000	10463			2359500
			430					2377000	11055			2614700
530	x	850	430	608	260,0	240,0	1900	2397000	11150	M30	653,4	2636700
			440					2520520	11457			2772572
			460					2777417	12076			3055159
560	x	940	450	632	260,0	240,0	1900	2545000	11311	M30	748,7	2799500
			460					2670006	11609			2937006
			480					2929521	12206			3222473
590	x	960	470	654	380,0	361,0	1900	4012000	17072	M30	1173,9	4413200
			480					4199188	17497			4619106
			500					4587043	18348			5045747
620	x	970	500	720	304,0	285,0	1900	3402000	13608	M30	886,7	3742200
			520					3708000	14261			4078800
			540					4028000	14918			4430800
660	x	1040	530	728	418,0	396,0	3500	5758000	21750	M36	1448,2	6333800
			550					6236900	22680			6860590
			570					6735919	23635			7409510
700	x	1140	560	815	315,0	294,0	2700	4518700	16138	M33	1467,5	4970570
			580					4880000	16828			5368000
			600					5258000	17527			5783800
750	x	1150	600	900	340,0	428,0	3500	7669000	25563	M36	1847,5	8435900
			620					8228643	26544			9051507
			650					9106895	28021			10017584
800	x	1230	640	935	373,0	352,0	2700	6897960	21226	M33	1894,4	7587756
			660					7378000	22358			8115800
			700					8390500	23973			9229550

To continue see next page

Shrink Discs RINGFEDER® RfN 4181

Explanation

d = Inner diameter	L₁ = Overall length (without screws)	n_{sc} = Quantity of screws
D = Outer diameter	L₃ = Width of ring	D_G = Thread
d_w = Solid shaft diameter	T_A = Max tightened torque of the clamping screws	G_w = Weight
d₁ = Pitch circle diameter	T = Transmissible torque at given T _A	T_{max} = Max. transmissible torque
L = Overall length	F_{ax} = Transmissible axial force	

Ordering example

Series	d	D
RfN 4181	260	430

Table Clearance

d _w		ISO	Max. clearance S
above	up to		mm
6	10	H6/j6	0,011
10	18		0,014
18	30		0,017
30	50	H6/h6	0,032
50	80	H6/g6	0,048
80	120	H7/g6	0,069
120	180		0,079
180	250		0,090
250	315		0,101
315	400		0,111
400	500		0,123
500	630		0,136
630	800		0,154

Clearances considered for the calculation of the function values

Technical information

- Surface finishes: For shaft $R_a \leq 3,2 \mu\text{m}$
- Tolerances: For shaft see table
- When using a hollow shaft instead of a solid shaft please contact our Engineering-Team.
- Hub with yield strength $R_{p0,2} \geq 360 \text{ N/mm}^2$
- 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 MoS₂ ($\mu_{\text{lot}} = 0,1$). The tapered cones are lubricated using MoS₂ ($\mu = 0,05$). 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 $210,000 \text{ N/mm}^2$. (Lower values result in increased values for T and F_{ax} with reduced tangential stress.) The maximum clearance S 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.

Further information on
RINGFEDER® RfN 4181 on
www.ringfeder.com

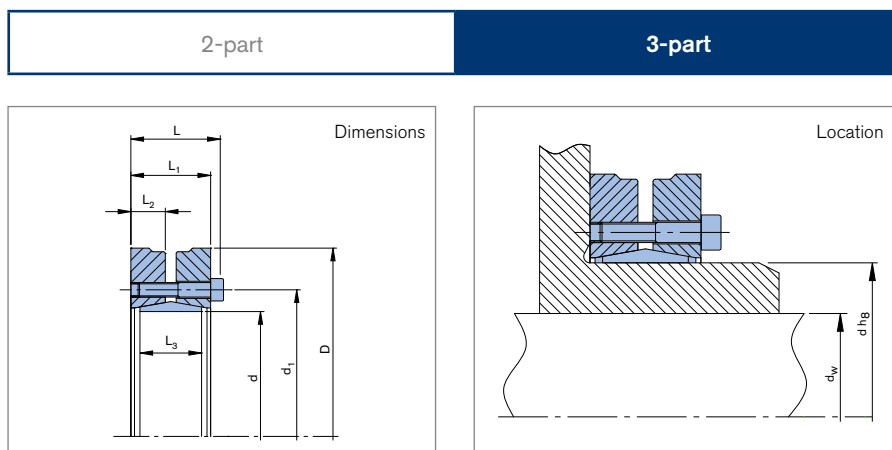
Disclaimer of liability

All technical details and notes are non-binding and cannot be used as a basis for legal claims. The user is obligated to determine whether the represented products meet his requirements. We reserve the right carry out modifications at any time in the interests of technical progress.

Shrink Discs

RINGFEDER® RfN 4061 stainless steel

Corrosion resistant series for high torques



Shrink Discs dimensions									Transmissible torques or axial forces				High-strength special screws				
d	x	D	d _w	d ₁	L	L ₁	L ₂	L ₃	T _A	T	F _{ax}	P	σ _v	ISO 4762 n _{Sc}	D _G	G _w	T _{max}
mm			mm	mm	mm	mm	mm	mm	Nm	Nm	kN	N/mm ²	N/mm ²		mm	kg	Nm
14	x	37	10	24	16	12	5	9	2,4	30	8	278	415	3	M4	0,1	37,5
			11							37	8		474				46
			12							48	10		557				60
16	x	41	12	27	20	15	6,25	12	4	70	15	336	509	4	M5	0,1	90
			13							90	18		575				110
			14							110	20		774				130
18	x	44	14	29	20	15	6,25	12	4	90	16	299	459	4	M5	0,2	110
			15							100	18		523				130
			16							120	20		705				160
20	x	46	15	32	22,5	17,5	7	12	4	110	20	336	462	5	M5	0,2	140
			16							140	22		497				170
			17							160	24		580				200
21	x	50	16	36	24	19	8	15	5	200	31	384	534	6	M5	0,2	250
			17							230	34		602				290
			18							260	37		746				330
24	x	50	19	36	24	19	8	15	5	240	32	336	495	6	M5	0,2	300
			20							270	35		554				340
			21							300	38		679				390
30	x	60	24	44	26,5	21,5	8,5	17	5	350	38	261	390	7	M5	0,2	450
			25							400	41		426				500
			26							440	43		492				560
36	x	72	28	52	29,5	23,5	10	18	12	590	53	303	390	5	M6	0,5	730
			30							690	58		438				860
			31							700	58		536				890

To continue see next page

Shrink Discs RINGFEDER® RfN 4061 stainless steel

Shrink Discs dimensions								T _A	Transmissible torques or axial forces		P	σ _v	High-strength special screws ISO 4762		G _w	T _{max}
d	x	D	d _w	d ₁	L	L ₁	L ₂		T	F _{ax}			n _{sc}	D _G		
mm			mm	mm	mm	mm	mm	Nm	Nm	kN	N/mm ²	N/mm ²		mm	kg	Nm
38	x	72	29	55	32	26	10	12	700	62	295	378	6	M6	0,5	890
			30						770	65		394				970
			31						780	63		474				980
40	x	72	30	57	30,5	24,5	10,5	12	720	61	310	375	6	M6	0,5	900
			31						730	59		450				910
			32						790	62		460				990
44	x	80	32	63	32	26	11	12	800	63	312	429	7	M6	0,5	1000
			35						1000	73		444				1250
			36						1050	76		458				1350
48	x	80	36	68	32	26	11	12	900	65	260	371	7	M6	0,6	1150
			38						1050	72		380				1350
			40						1200	78		403				1550
50	x	90	38	70	33,5	27,5	11,5	12	1350	89	314	418	9	M6	0,9	1650
			40						1500	96		433				1900
			42						1700	103		467				2150
55	x	100	42	75	36,5	30,5	12	12	1300	78	248	343	8	M6	1,1	1600
			45						1550	87		359				1950
			48						1800	96		410				2300
62	x	110	48	86	36,5	30,5	12,5	12	2400	126	330	407	12	M6	1,3	3000
			50						2650	133		419				3300
			52						2800	136		482				3500
68	x	115	50	86	36,5	30,5	12	12	1900	95	245	314	10	M6	1,4	2350
			55						2250	104		367				2850
			60						2850	121		411				3600
75	x	138	55	100	40,5	32,5	13	25	2650	121	277	377	7	M8	2,3	3300
			60						3300	139		382				4150
			65						4050	158		416				5100
80	x	145	60	100	40,5	32,5	13	25	3200	126	259	353	7	M8	2,5	4000
			65						3900	143		358				4900
			70						4600	160		392				5750
85	x	155	60	114	48,5	40,5	16	30	4850	189	325	404	11	M8	3,5	6050
			65						5800	212		407				7250
			70						6800	235		427				8500
90	x	155	65	114	47	39	16	30	4800	174	274	353	10	M8	3,3	6000
			70						6050	195		356				7550
			75						7300	215		372				9150
95	x	170	65	127	55,1	47,1	19	34	5350	195	275	349	12	M8	4,7	6700
			70						6750	217		349				8450
			75						8150	240		355				10200
100	x	170	70	127	55,1	47,1	19	34	6950	202	261	331	12	M8	4,5	8700
			75						7600	223		331				9500
			80						9100	245		338				11350
110	x	185	75	145	63	53	21,5	42	8150	259	254	316	10	M10	6,3	10150
			80						10100	285		316				12600
			85						12200	296		357				15250
115	x	185	80	145	66	56	21,5	42	9500	267	243	302	10	M10	6,1	11850
			90						12100	302		342				15100
			95						14050	329		353				17550

To continue see next page

Shrink Discs RINGFEDER® RfN 4061 stainless steel

Shrink Discs dimensions									Transmissible torques or axial forces				High-strength special screws				
d	x	D	d _w	d ₁	L	L ₁	L ₂	L ₃	T _A	T	F _{ax}	P	σ _v	ISO 4762 n _{Sc}	D _G	G _w	T _{max}
mm			mm	mm	mm	mm	mm	mm	Nm	Nm	kN	N/mm ²	N/mm ²		mm	kg	Nm
125	x	215	85	160	64	54	23	42	59	11050	300	269	354	12	M10	8,7	13800
			90							13100	327		16350				
			95							15150	355		18950				
140	x	230	95	175	72,5	60,5	26	46	100	15100	365	263	336	10	M12	10,6	18850
			100							17550	395		335				21900
			105							20000	424		335				25000
165	x	290	115	210	87	71	31	56	250	31400	601	280	334	8	M16	21,7	39300
			120							35500	637		335				44400
			125							39400	664		348				49250
185	x	330	135	236	102,4	86,4	38,2	71	250	52500	786	246	307	10	M16	36	65600
			140							57350	828		310				71650
			145							62400	870		314				78000
195	x	350	140	246	102	86	38,2	71	250	65950	943	280	332	12	M16	40	82450
			150							77600	1035		338				97000
			155							83750	1081		345				104700
200	x	350	150	246	102	86	38,2	71	250	75000	1000	273	326	12	M16	39	93750
			155							81000	1045		330				101200
			160							87200	1091		337				109000

More sizes on request
To continue see next page

Shrink Discs RINGFEDER® RfN 4061 stainless steel

Explanation

d = Inner diameter	L₃ = Width of ring	n_{Sc} = Quantity of screws
D = Outer diameter	T_A = Tightening torque of the clamping screws	D_G = Thread
d_w = Solid shaft diameter	T = Transmissible torque at given T _A	G_w = Weight
d₁ = Pitch circle diameter	F_{ax} = Transmissible axial force	T_{max} = Max. transmissible torque
L₁ = Overall length (without screws)	P = Hub surface pressure	
L₂ = Thrust ring width	σ_v = Equivalent stress in the hub	

Ordering example

Series	d	D	Version
RfN 4061	95	170	SST

SST = Stainless steel

Table Clearance

d _w		ISO	Max. clearance S
above	up to		mm
6	10	H6/j6	0,011
10	18		0,014
18	30		0,017
30	50		0,032
50	80	H6/g6	0,048
80	120	H7/g6	0,069
120	180		0,079
180	250		0,090
250	315		0,101
315	400		0,111
400	500		0,123
500	630		0,136
630	800		0,154

Technical information

- Surface finishes: For shaft R_a ≤ 3,2 μm
- Tolerances: For shaft see table
- When using a hollow shaft instead of a solid shaft please contact our Engineering-Team.
- 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 MoS₂ (μ_{tot} = 0,1). The tapered cones are lubricated using MoS₂ (μ = 0,05). The contact surfaces (d_w) are in lightly oiled condition with coefficient of friction μ = 0,12. The hub and shaft materials have a modulus of elasticity of 210,000 N/mm². (Lower values result in increased values for T and Fax with reduced tangential stress.) The maximum clearance S 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.

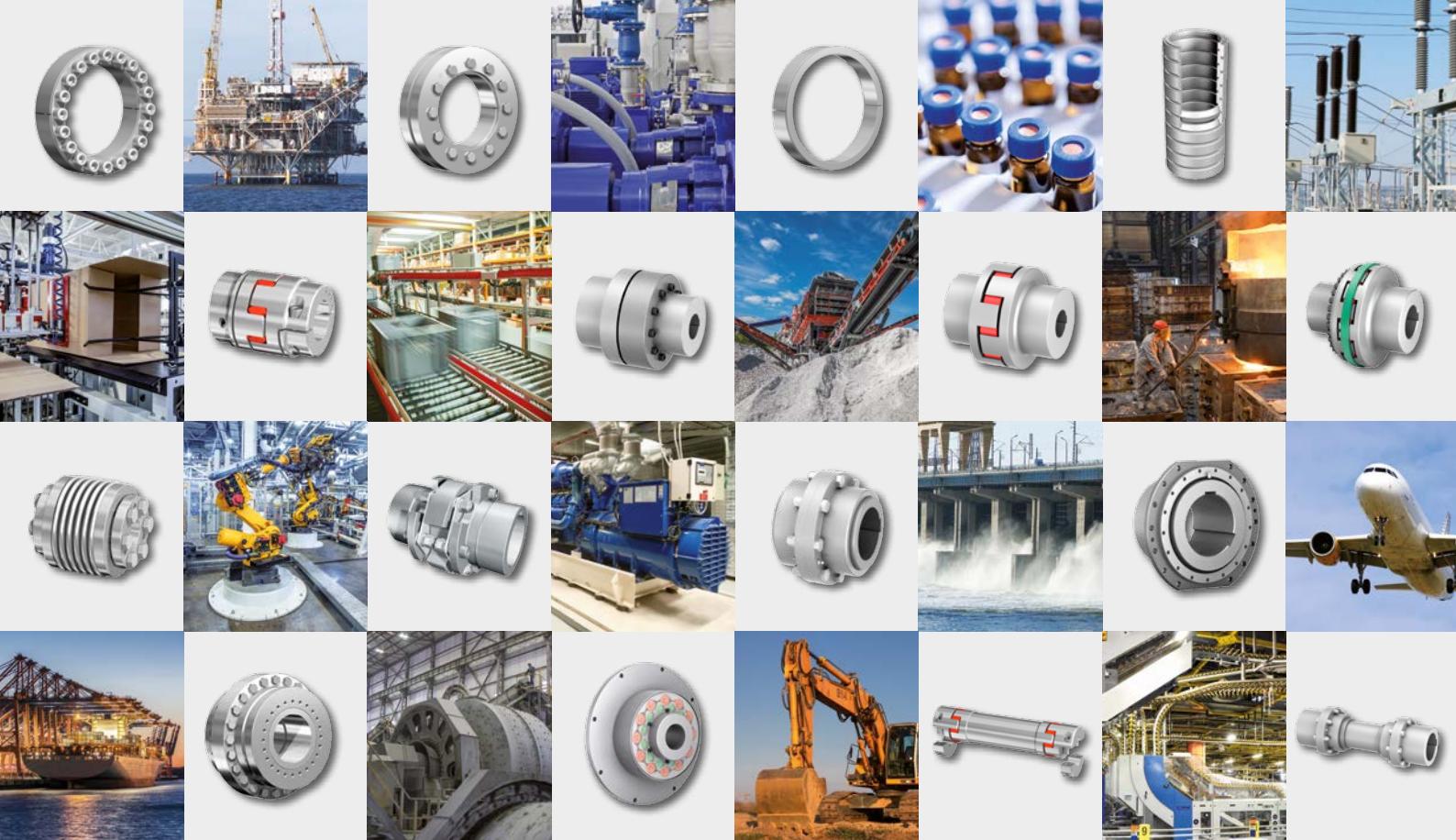
Clearances considered for the calculation of the function values

Further information on
RINGFEDER® RfN 4061 stainless steel
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