Partner for Performance

RINGFEDER

Shrink Discs

Shrink Discs

Shrink Discs stainless steel

EN 08.2019 | **Product Paper & Tech Paper**

Welcome


Machine Building

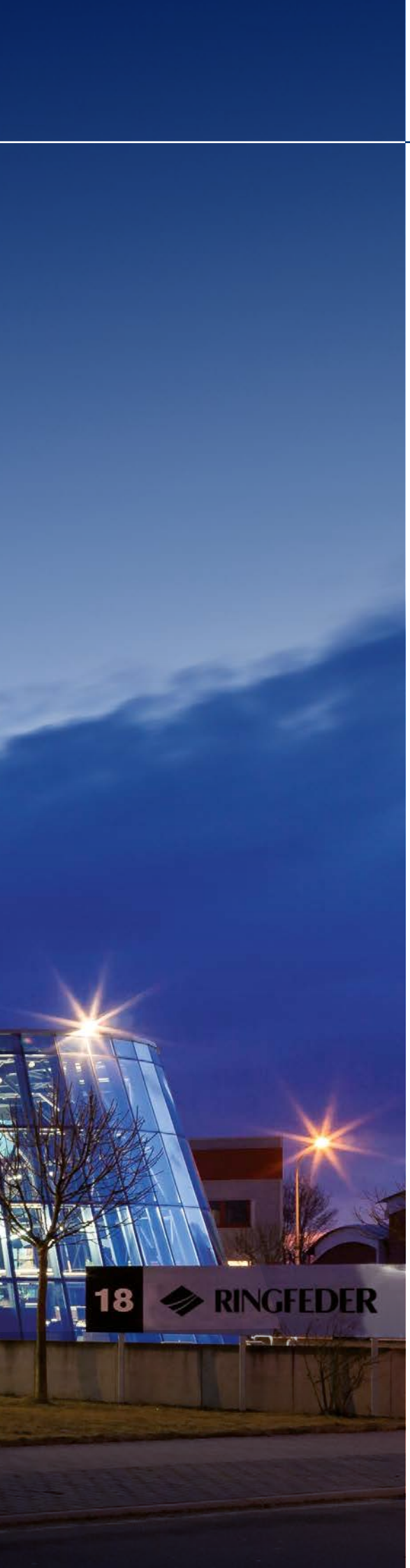

Aerospace


Process


Movement


Energy


Extraction



RINGFEDER
POWER TRANSMISSION

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.
Online calculation program
Always find the right solution.
On-site worldwide
We are there for you. Anytime, anywhere.
Customer
Value

RINGFEDER
POWER TRANSMISSION

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!**

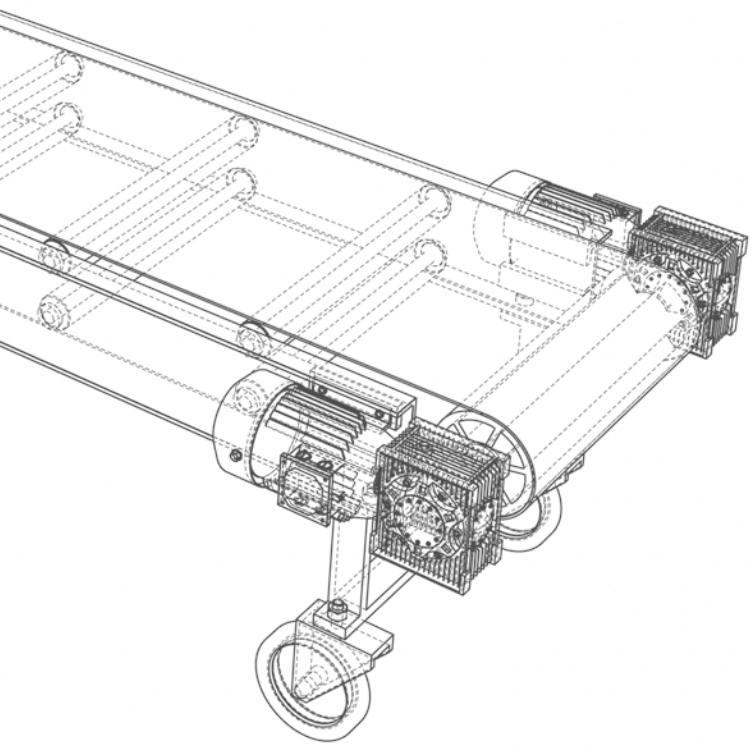
On-site worldwide:
We are there for you. Anytime, anywhere.

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 above	d_w up to	ISO	max. Clearance S 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

Surface finishes

For shaft diameter d_W: **$R_a \leq 3{,}2$ µm**
For hub bore: **$R_a \leq 3{,}2$ 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		●

RfN 4051

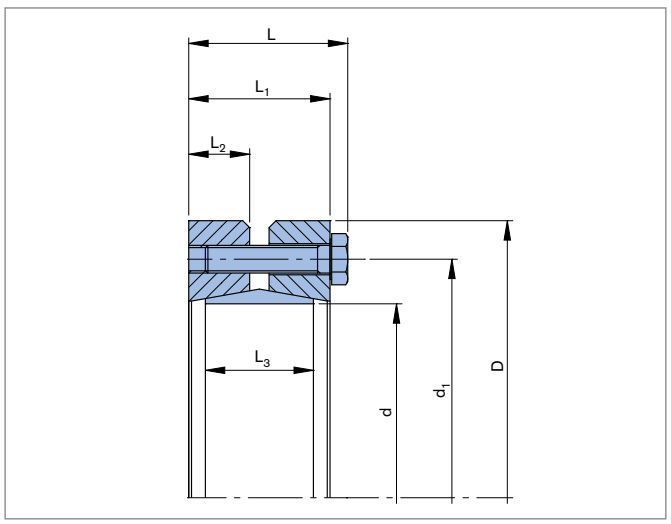
2-part

3-part

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

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.

RfN 4061

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

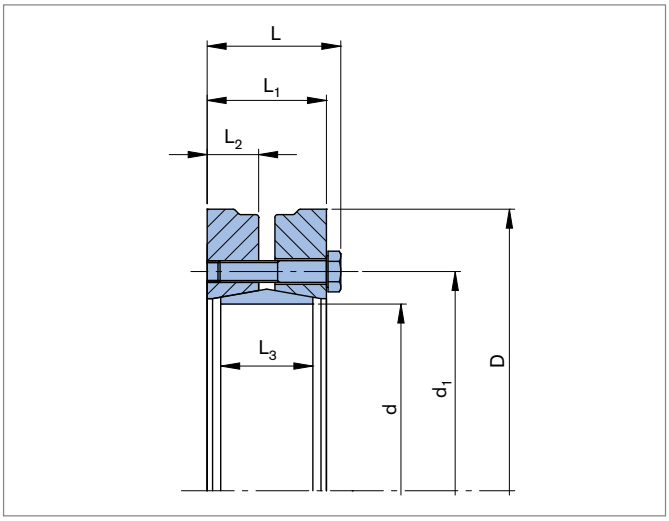
2-part

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.

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

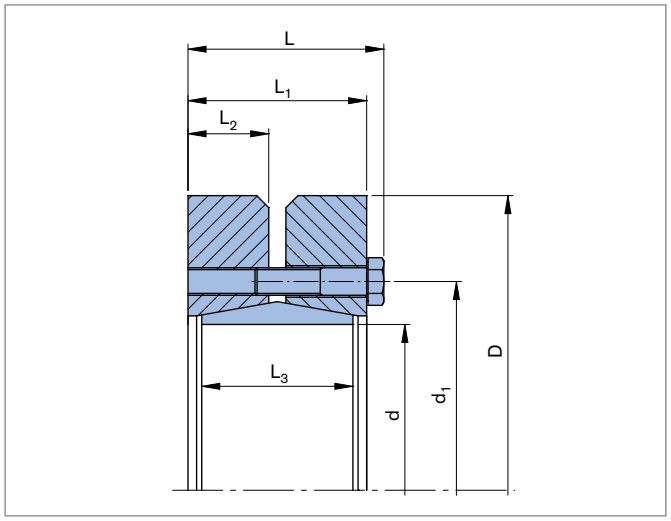
2-part

3-part

Standard series for high torque

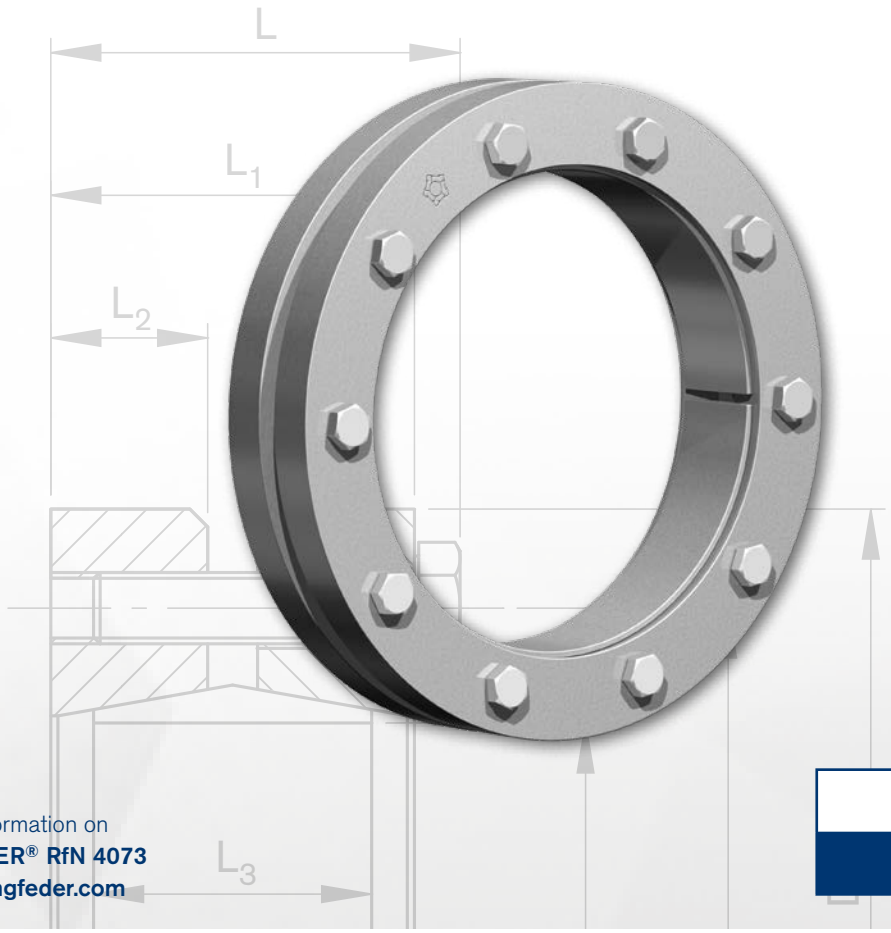
Slit inner ring – low losses and pressure on the hub.

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.



RfN 4073

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

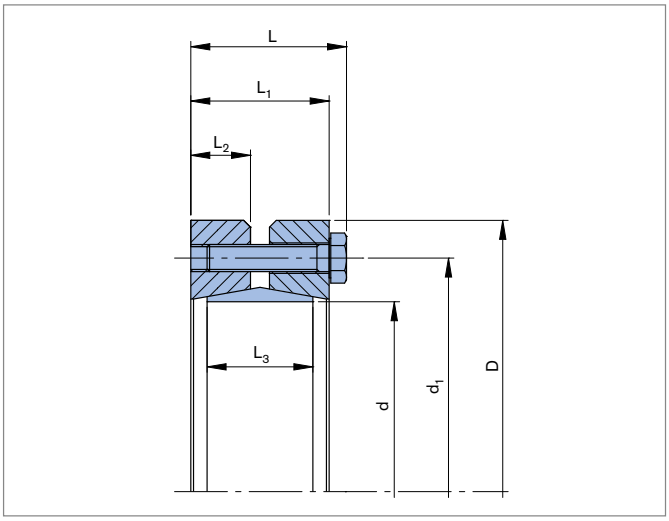
2-part

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.

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

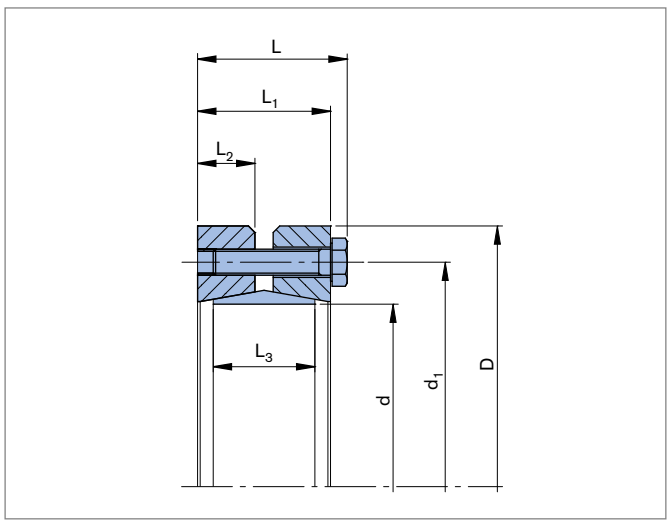
2-part

3-part

Heavy series for the highest torque

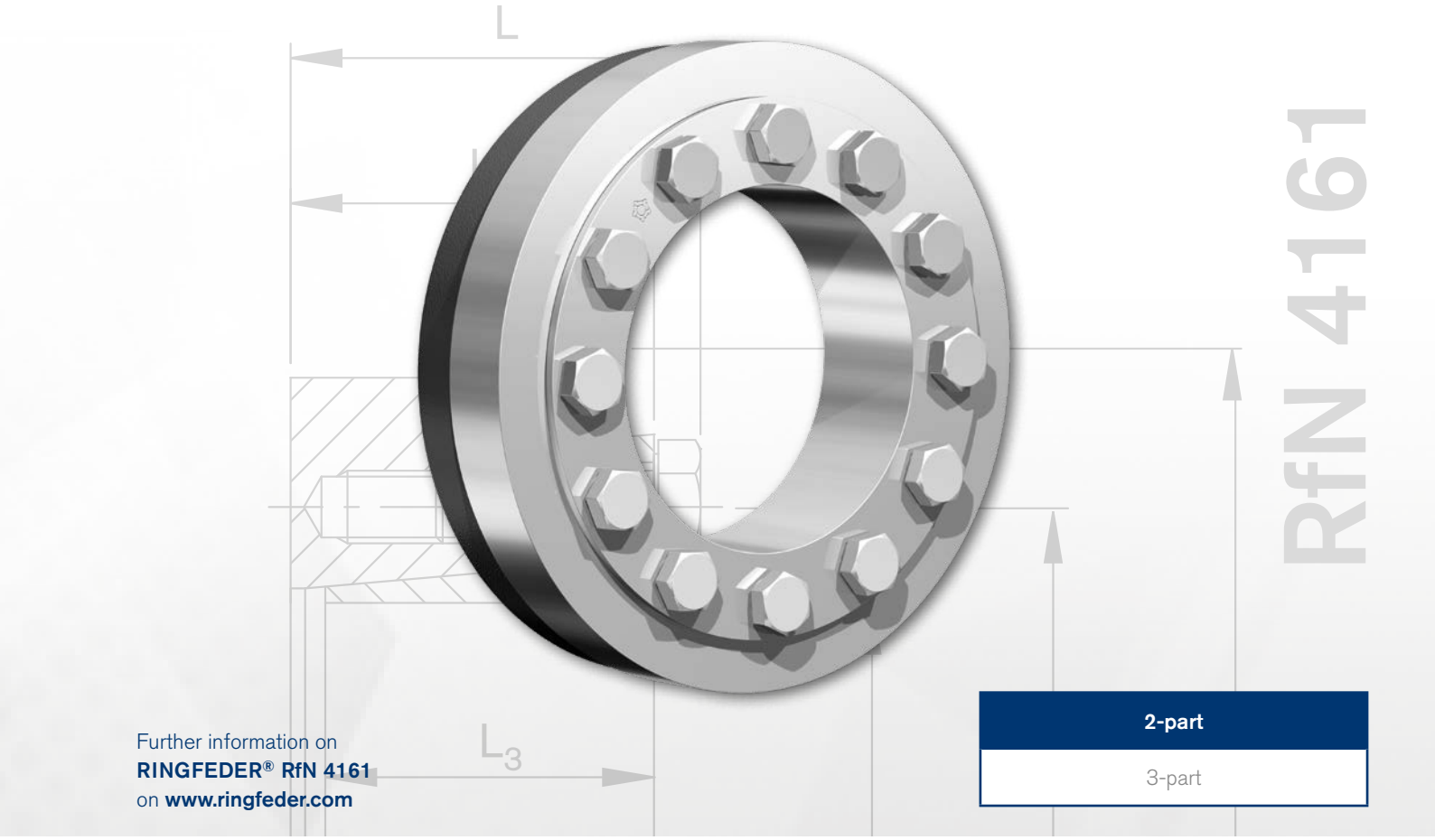
Slit inner ring – low losses and pressure on the hub.

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.



RfN 4161

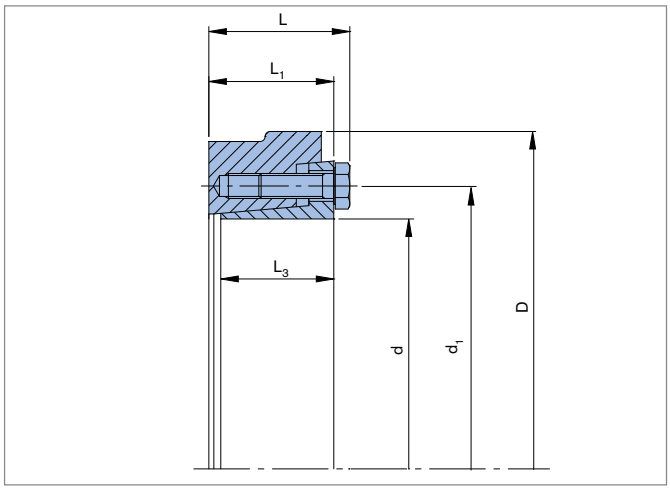
Further information on
RINGFEDER® RfN 4161
on **www.ringfeder.com**

2-part

3-part

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.

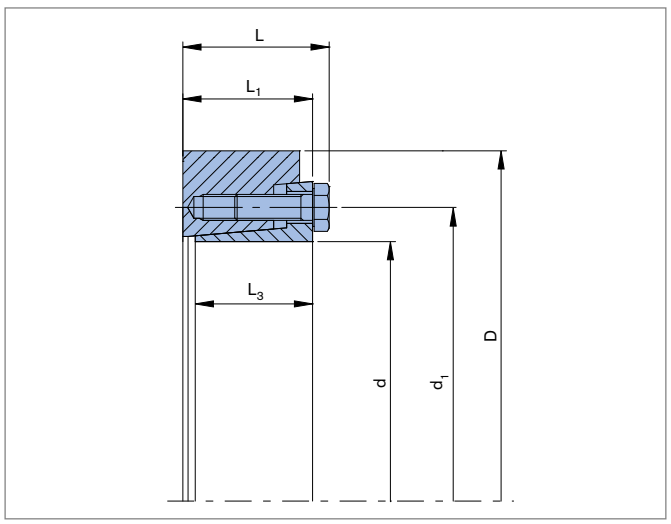
Further information on
RINGFEDER® RfN 4181
on **www.ringfeder.com**

2-part

3-part

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.

RfN 4061

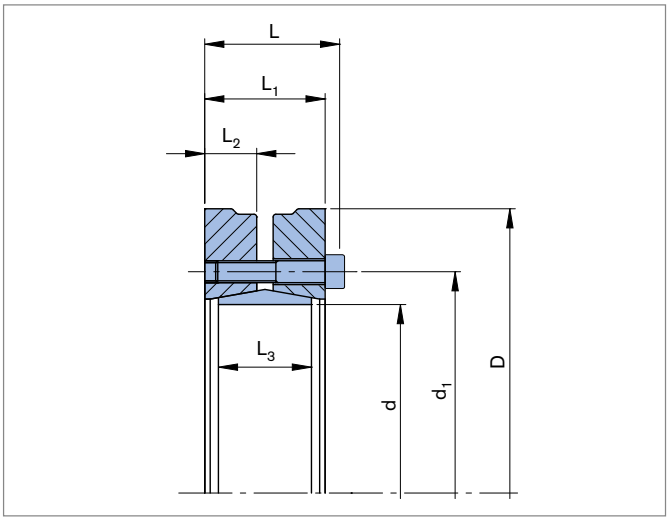
Further information on
RINGFEDER® RfN 4061 stainless steel
on **www.ringfeder.com**

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

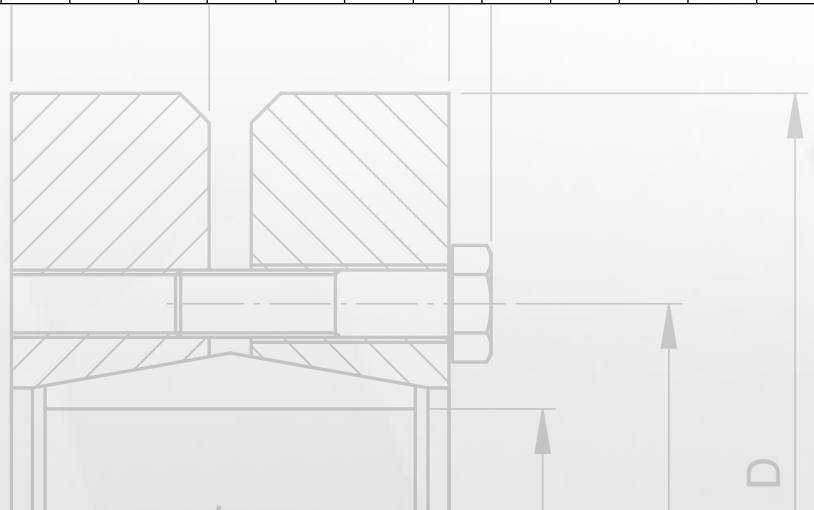
- **Standard series** – High transmission values are possible and by varying the screw tightening torque the shrink disc can be adapted to the design specification.
- **Slit inner ring** – low forces and pressures on hub and shaft.
- **Compensation of small tolerance errors** – please contact our engineers.
- **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 mm		D11 µm		E8 µm		E7 µm		F8 µm		F7 µm		G7 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	+ 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 mm		H6 µm		J7 µm		J6 µm		K7 µm		K6 µm		M7 µm		M6 µm		N7 µm		N6 µm		P7 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

RINGFEDER

EN | Tech Paper | 08.2019

Shrink Discs & Shrink Discs stainless steel RINGFEDER®

Tables & Values

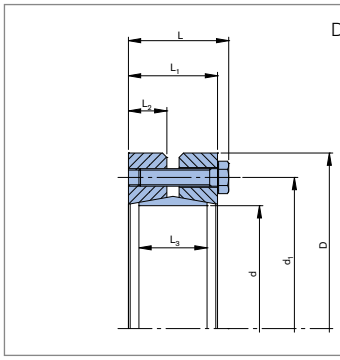
Shrink Discs

RINGFEDER® RfN 4051

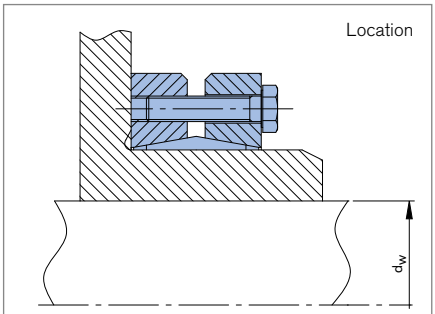
Lighter version for moderate transfer values – particularly suited for thin hubs and hollow shafts

2-part | **3-part**

Dimensions



Location



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	mm	Nm	Nm	kN	N/mm²	N/mm²		mm	kg	Nm
	95								10550	220		278				13200
125 x 185	100	158	58	51	22	39	30,5	59	12100	240	191	280	8	M10	5,1	15125
	105								13800	260		288				17250
	110								14800	265		268				18500
140 x 220	120	175	58	51	22	39	30,85	59	18640	310	192	281	9	M10	8	23300
	125								20500	325		315				25625
	130								24000	365		293				30000
155 x 245	135	192	58	51	22	39	30,5	59	26400	390	212	306	11	M10	10	33000
	140								29000	410		334				36250
	135								32000	475		298				40000
165 x 260	140	210	70	62	26	46	36	100	35200	500	224	308	10	M12	14	44000
	145								38500	530		327				48125
	145								39000	535		302				48750
175 x 275	150	220	70	62	26	46	36	100	42400	560	232	313	11	M12	14,7	53000
	155								46000	590		334				57500
	155								46600	600		307				58250
185 x 295	160	225	70	62	26	46	36	100	50300	625	240	319	12	M12	17,2	62875
	165								54000	650		341				67500
	165								63000	760		306				78750
195 x 315	170	237	80	72	31	56	41	100	67700	795	233	323	15	M12	23,8	84625
	175								72500	825		355				90625
	175								74000	850		334				92500
200 x 330	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	Gw	T_{max}
mm	mm	mm	mm	mm	mm	mm	mm	Nm	Nm	kN	N/mm²	N/mm²		mm	kg	Nm
	180								82800	920		277				103500
220 x 345	190	265	94	84	36	66	47	250	93500	980	220	306	10	M16	32	116875
	200								105000	1055		367				131250
	200								113000	1135		304				141250
240 x 370	210	290	94	84	36	66	47	250	127500	1210	243	330	12	M16	36	159375
	215								134500	1250		356				168125
	220								149000	1350		303				186250
260 x 395	230	310	102	92	40	72	52,5	250	165000	1435	240	334	14	M16	48	206250
	235								173000	1475		364				216250
	230								171000	1485		270				213750
280 x 425	240	333	114	104	46	84	59,5	250	189000	1570	218	287	16	M16	60	236250
	250								208000	1660		324				260000
	250								215000	1720		279				268750
300 x 460	260	358	114	104	46	84	59,5	250	234000	1800	229	303	18	M16	70	292500
	270								255000	1890		342				318750
	270								260000	1940		293				325000
320 x 495	280	378	116	106	48	84	60,5	250	284000	2030	239	313	20	M16	84	355000
	290								306000	2125		355				382500
	290								300000	2070		288				375000
340 x 535	300	402	116	106	48	84	60,5	250	324000	2160	236	309	21	M16	100	405000
	305								337000	2210		326				421250
	300								372000	2485		292				465000
350 x 545	305	413	135	122	54	100	68,5	490	385000	2540	230	304	16	M20	120	481250
	310								400000	2590		320				500000
	300								360000	2400		270				450000
360 x 555	310	423	135	122	54	100	68,5	490	388000	2500	223	284	16	M20	125	485000
	320								415000	2590		314				518750
	320								435000	2720		268				543750
380 x 585	325	442	149	136	60	112	75,5	490	451000	2780	213	275	18	M20	150	563750
	330								467000	2835		285				583750
	330								505000	3060		285				631250
390 x 595	340	452	149	136	60	112	78	490	540000	3175	230	304	20	M20	156	675000
	350								577000	3295		337				721250
	340								550000	3235		291				687500
400 x 615	350	462	149	136	60	112	78	490	587000	3360	236	311	21	M20	164	733750
	360								626000	3480		345				782500
	350								578000	3300		265				722500
420 x 630	360	485	157	144	64	120	82	490	617000	3425	219	277	22	M20	185	771250
	370								655000	3545		297				818750
	370								677000	3660		274				846250
440 x 660	380	505	157	144	64	120	82	490	719000	3785	229	287	24	M20	205	898750
	390								762000	3910		309				952500
	390								840000	4320		283				1050000
460 x 685	400	527	171	158	71	132	91,5	490	890000	4460	232	299	28	M20	235	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	Gw	T_{max}
mm	mm	mm	mm	mm	mm	mm	mm	Nm	Nm	kN	N/mm²	N/mm²		mm	kg	Nm
	410								891000	4350		275				1113750
480 x 715	420	547	171	158	71	132	91,5	490	941000	4480	222	290	28	M20	255	1176250
	425								966000	4548		301				1207500
	425								986000	4645		275				1232500
500 x 750	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	**L_2**	= Thrust ring width	**P**	= Hub surface pressure
D	= Outer diameter	**L_3**	= 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
d_1	= 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
L_1	= 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 above	d_w up to	ISO	Max. clearance S mm
6	10		0,011
10	18	H6/j6	0,014
18	30		0,017
30	50	H6/h6	0,032
50	80	H6/g6	0,048
80	120		0,069
120	180		0,079
180	250		0,090
250	315	H7/g6	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 $R_a \leq 3{,}2$ 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 MoS_2 (μ_{tot}= 0,1). The tapered cones are lubricated using MoS_2 (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.

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

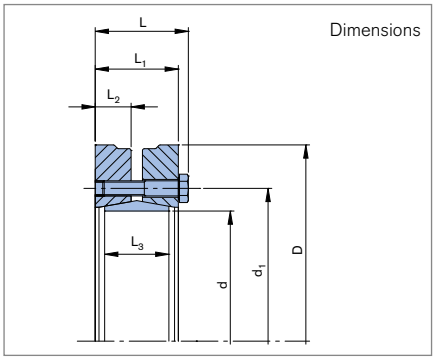
RINGFEDER POWER TRANSMISSION

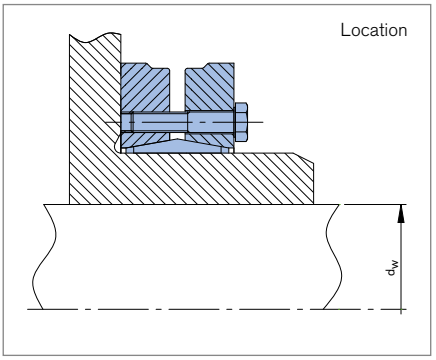
Shrink Discs

RINGFEDER® RfN 4061

Standard series for high torque

2-part | **3-part**





Shrink Discs dimensions									Transmissible torques or axial forces				Locking screws ISO 4014/4017 - 10.9			
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	Gw	T_{max}
mm	mm	mm	mm	mm	mm	mm	mm	Nm	Nm	kN	N/mm²	N/mm²		mm	kg	Nm
	10								30	8		415				37,5
14 x 37	11	24	14,8	12	5	9	9,5	2,4	37	8	278	474	3	M4*)	0,1	46
	12								48	10		557				60
	12								70	15		509				90
16 x 41	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
	14								90	16		459				110
18 x 44	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
	15								110	20		462				140
20 x 46	16	32	21	17,5	7	12	11,5	4	140	22	336	497	5	M5	0,2	170
	17								160	24		580				200
	16								200	31		534				250
21 x 50	17	36	22,5	19	8	15	11,8	5	230	34	384	602	6	M5	0,2	290
	18								260	37		746				330
	19								240	32		495				300
24 x 50	20	36	22,5	19	8	15	11,8	5	270	35	336	554	6	M5	0,2	340
	21								300	38		679				390
	24								350	38		390				450
30 x 52	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
	28								590	53		390				730
36 x 72	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

*) 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 ISO 4014/4017 - 10.9			
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	Gw	T_{max}
mm	mm	mm	mm	mm	mm	mm	mm	Nm	Nm	kN	N/mm²	N/mm²		mm	kg	Nm
	29								700	62		378				890
38 x 72	30	55	30	26	10,5	21	15,2	12	770	65	295	394	6	M6	0,5	970
	31								780	63		474				980
	30								720	61		375				900
40 x 72	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
	32								800	63		429				1000
44 x 80	35	63	30	26	11	20	15,3	12	1000	73	312	444	7	M6	0,5	1250
	36								1050	76		458				1350
	36								900	65		371				1150
48 x 80	38	68	30	26	11	22	15,8	12	1050	72	260	380	7	M6	0,6	1350
	40								1200	78		403				1550
	38								1350	89		418				1650
50 x 90	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
	42								1300	78		343				1600
55 x 100	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
	48								2400	126		407				3000
62 x 110	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
	50								1900	95		314				2350
68 x 115	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
	55								2650	121		377				3300
75 x 138	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
	60								3200	126		353				4000
80 x 145	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
	60								4850	189		404				6050
85 x 155	65	114	45,8	40,5	16	30	23	30	5800	212	325	407	11	M8	3,5	7250
	70								6800	235		427				8500
	65								4800	174		353				6000
90 x 155	70	114	44,5	39	17	30	23	30	6050	195	274	356	10	M8	3,3	7550
	75								7300	215		372				9150
	65								5350	195		349				6700
95 x 170	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
	70								6950	202		331				8700
100 x 170	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
	75								8150	259		316				10150
110 x 185	80	145	59,4	53	23	42	28,5	59	10100	285	254	316	10	M10	6,3	12600
	85								12200	296		357				15250
	80								9500	267		302				11850
115 x 185	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				Locking screws ISO 4014/4017 - 10.9			
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	Gw	T_{max}
mm	mm	mm	mm	mm	mm	mm	mm	Nm	Nm	kN	N/mm²	N/mm²		mm	kg	Nm
	85								11050	300		354				13800
125 x 215	90	160	60,4	54	23	42	32	59	13100	327	269	352	12	M10	8,7	16350
	95								15150	355		352				18950
	95								15100	365		336				18850
140 x 230	100	175	68	60,5	26	46	35,5	100	17550	395	263	335	10	M12	10,6	21900
	105								20000	424		335				25000
	105								22000	447		320				27500
155 x 265	110	192	72,5	64,5	28	50	37,2	100	25000	478	263	320	12	M12	15	31250
	115								28000	509		322				35000
	115								31400	601		334				39300
165 x 290	120	210	81	71	31	56	40,5	250	35500	637	280	335	8	M16	21,7	44400
	125								39400	664		348				49250
	125								36000	605		334				45000
175 x 300	130	220	81	71	31	56	40,5	250	41000	639	261	321	8	M16	22	51250
	135								45000	675		324				56250
	135								52500	786		307				65600
185 x 330	140	236	96,4	86,4	38,2	71	48	250	57350	828	246	310	10	M16	36	71650
	145								62400	870		314				78000
	140								65950	943		332				82450
195 x 350	150	246	96	86	38,2	71	48	250	77600	1035	280	338	12	M16	40	97000
	155								83750	1081		345				104700
	150								75000	1000		326				93750
200 x 350	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	**L_3**	= 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
d_1	= Pitch circle diameter	**T**	= Transmissible torque at given T_A	**Gw**	= Weight
L_1	= Overall length (without screws)	**F_{ax}**	= Transmissible axial force	**T_{max}**	= Max. transmissible torque
L_2	= 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 above	d_w up to	ISO	Max. clearance S 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 $R_a \leq 3{,}2$ 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 MoS_2 (μ_{tot}= 0,1). The tapered cones are lubricated using MoS_2 (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/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 4061 on
www.ringfeder.com

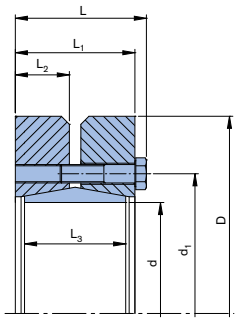
Shrink Discs

RINGFEDER® RfN 4071

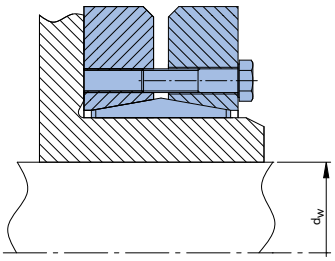
Standard series for high torque

2-part | **3-part**

Dimensions



Location



Shrink Discs dimensions											Transmissible torques or axial forces				Locking screws ISO 4014/4017 - 10.9			
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	Gw	T_{max}
mm			mm	mm	mm	mm	mm	mm	mm	Nm	Nm	kN	N/mm²	N/mm²	Stück	mm	kg	Nm
			160								95000	1190		295				118750
220	x	370	165	270	114	104	47	88	59,5	250	102000	1239	248	298	15	M16	54	127500
			170								110000	1290		303				137500
			170								120000	1464		309				150000
240	x	405	180	295	122	109	49	92	62	490	138000	1576	272	315	12	M20	67	172500
			190								156000	1675		334				195000
			190								164000	1760		306				205000
260	x	430	200	321	133	120	54	103	67,5	490	184000	1880	262	314	14	M20	82	230000
			210								205000	2010		329				256250
			210								217000	2090		295				271250
280	x	460	220	346	147	134	60	114	76,5	490	244000	2220	251	306	16	M20	102	305000
			230								270000	2350		324				337500
			230								275000	2431		291				343750
300	x	485	240	364	155	142	64	122	79,5	490	295000	2567	246	303	18	M20	118	368750
			245								315000	2636		312				393750
			240								312000	2647		293				390000
320	x	520	250	386	155	142	64	122	79,5	490	340000	2786	257	301	20	M20	131	425000
			260								374000	2900		320				467500
			250								390000	3119		295				487500
340	x	570	260	408	169	156	71	134	86,5	490	422500	3249	264	307	24	M20	186	528125
			270								460000	3400		317				575000
			270								442000	3276		289				552500
350	x	580	280	432	175	162	73	140	89,5	490	480000	3430	245	300	24	M20	195	600000
			285								500000	3500		307				625000

To continue see next page

Shrink Discs RINGFEDER® RfN 4071

Shrink Discs dimensions											Transmissible torques or axial forces				Locking screws ISO 4014/4017 - 10.9			
d	x	D	d_w	d_1	L	L_1	L_2	L_3	L_B	T_A	T	F_{ax}	P	σv	n_{Sc}	D_G	Gw	T_{max}
mm			mm	mm	mm	mm	mm	mm	mm	Nm	Nm	kN	N/mm²	N/mm²	Stück	mm	kg	Nm
			280								463000	3310		282				578750
360	x	590	290	432	175	162	73	140	89,5	490	502000	3461	238	292	24	M20	204	627500
			295								522000	3536		298				652500
			290								567000	3910		300				708750
380	x	645	300	458	183	168	76	144	92,5	840	610000	4080	263	307	20	M24	239	762500
			310								658000	4248		320				822500
			300								624000	4160		305				780000
390	x	660	310	468	183	168	76	144	92,5	840	671000	4330	270	314	21	M24	260	838750
			320								718000	4484		331				897500
			315								670000	4260		302				837500
400	x	680	320	480	183	168	76	144	92,5	840	695000	4345	263	310	21	M24	280	868750
			330								744000	4500		324				930000
			330								780000	4850		295				975000
420	x	690	340	504	203	188	86	164	106,5	840	840000	5040	251	306	24	M24	316	1050000
			350								900000	5220		322				1125000
			340								806000	4740		267				1007500
440	x	750	350	527	217	202	91	177	113,5	840	860000	4910	223	274	24	M24	408	1075000
			360								917000	5090		285				1146250
			360								1000000	5670		293				1250000
460	x	770	370	547	217	202	91	177	113,5	840	1070000	5860	248	301	28	M24	420	1337500
			380								1400000	6050		314				1750000
			380								1170000	6150		282				1462500
480	x	800	390	570	228	213	96	188	119	840	1240000	6350	240	292	30	M24	505	1550000
			400								1310000	6550		306				1637500
			400								1312000	6560		284				1640000
500	x	850	410	590	230	213	96	188	119	1250	1380000	6730	242	297	24	M27	575	1725000
			420								1455000	6930		311				1818750

More sizes on request

To continue see next page

Shrink Discs RINGFEDER® RfN 4071

Explanation

d	= Inner diameter	**L_2**	= Thrust ring width	**P**	= Hub surface pressure
D	= Outer diameter	**L_3**	= 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
d_1	= 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
L_1	= 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 above	d_w up to	ISO	Max. clearance S 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 $R_a \leq 3{,}2$ 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 MoS_2 (μ_{tot}= 0,1). The tapered cones are lubricated using MoS_2 (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.

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

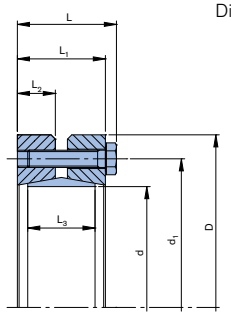
Shrink Discs

RINGFEDER® RfN 4073

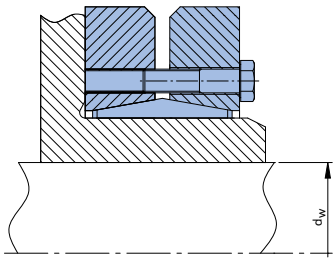
Mini series for particularly light applications

2-part | **3-part**

Dimensions



Location



Shrink Discs dimensions									T_A	Transmissible torques or axial forces		P	σ_v	Locking screws ISO 4014/4017 - 10.9		Gw	T_{max}
d	x	D	d_w	d_1	L	L_1	L_2	L_3		T	F_{ax}			n_{Sc}	D_G		
mm			mm	mm	mm	mm	mm	mm	Nm	Nm	kN	N/mm²	N/mm²	Stück	mm	kg	Nm
			9							9	2,5		389				18
14	x	34	10	24	14	12	5,0	9	2,4	14	3,5	222	372	3	M4*)	0,1	26
			11							20	4,6		361				35
			11							32	7,2		408				40
16	x	42	12	30	14,8	12	5,0	9	2,4	41	8,5	264	414	4	M4*)	0,1	51
			13							52	9,9		440				64
			14							41	7,3		310				51
20	x	47	15	34	17,5	14	6,0	10	3	51	8,4	193	311	4	M5	0,13	64
			16							62	9,6		320				78
			16							68	10,5		320				85
22	x	50	17	37	18,5	15	6,5	10	3	80	11,5	219	326	5	M5	0,16	100
			18							94	13,0		341				118
			18							185	26,0		503				231
24	x	50	19	39	18,5	15	6,5	10	5	205	28,0	274	543	5	M5	0,16	256
			20							235	30,0		581				293
			20							77	9,6		270				96
28	x	56	22	43	18,5	15	6,5	10	3	103	11,5	172	271	5	M5	0,18	129
			24							132	13,5		289				165
			24							110	11,0		244				138
31	x	60	25	46	18,5	15	6,5	10	3	123	12,0	156	246	5	M5	0,2	154
			27							154	14,0		264				193
			28							161	14,0		233				201
36	x	66	30	52	18,5	15	6,5	10	3	194	16,0	161	239	6	M5	0,24	243
			32							215	16,5		328				269

*) 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 ISO 4014/4017 - 10.9			
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	Gw	T_{max}
mm			mm	mm	mm	mm	mm	mm	Nm	Nm	kN	N/mm²	N/mm²	Stück	mm	kg	Nm
			33							265	20,0		325				331
40	x	68	34	55	18,5	15	6,5	10	4	290	21,0	194	329	6	M5	0,23	363
			35							320	22,5		336				396
			38							400	26,0		278				503
46	x	80	40	63	22,5	19	8,0	14	4	470	29,0	160	288	8	M5	0,44	589
			42							550	32,5		326				683
			42							440	26,0		249				550
51	x	86	44	68,5	22,5	19	8,0	14	4	510	28,5	144	255	8	M5	0,49	640
			45							550	30,0		261				680
			46							560	30,0		241				690
56	x	91	48	73	22,5	19	8,0	14	4	630	32,5	148	245	9	M5	0,52	790
			50							710	35,0		258				890
			52							710	34,0		285				890
61	x	96	54	77	22,5	19	8,0	14	4	810	37,0	151	291	10	M5	0,56	1010
			56							910	40,0		309				1130
			58	82						850	36,5		266				1070
66	x	100	60	82	22,5	19	8,0	14	4	950	39,5	140	276	10	M5	0,57	1190
			62	82						1060	42,5		308				1320
			62							1410	56,5		279				1770
70	x	110	64	90	27,5	24	10,0	18	6	1560	60,5	153	300	10	M5	0,93	1950
			65							1630	62,5		322				2040
			66							1480	55,0		256				1840
75	x	114	68	93	27,5	24	10,0	18	6	1620	59,0	142	268	10	M5	0,93	2020
			70							1770	63,0		301				2210
			71							2000	70,0		269				2500
80	x	120	73	101	27,5	24	10,0	18	6	2160	74,0	161	285	12	M5	1,04	2700
			75							2330	77,5		329				2920
			76							2370	77,5		246				2960
85	x	128	78	105	32	28	11,5	22	12	2560	82,0	137	266	8	M6	1,41	3200
			80							2760	86,0		316				3450
			82							2300	69,5		253				2870
94	x	140	85	119	32	28	11,5	22	12	2600	76,0	124	262	8	M6	1,66	3250
			88							2920	83,0		289				3660
			92							3000	81,0		239				3750
105	x	150	95	128	32	28	11,5	22	12	3330	87,0	125	246	9	M6	1,77	4160
			98							3680	93,5		266				4600
			100							3390	84,5		225				4240
112	x	158	104	135	32	28	11,5	22	12	3850	92,5	117	241	9	M6	1,91	3570
			106							4100	96,0		264				5120
			106							3900	91,5		208				4870
120	x	164	110	141	36	32	13,0	25	12	4400	100,0	107	217	10	M6	2,2	5500
			112							4670	104,0		230				5830
			115							4250	99,0		191				5320
130	x	172	120	151	36	32	13,0	25	12	4890	101,5	99	202	10	M6	2,21	6110
			122							5100	104,0		225				6380
			125							5690	135,0		208				7110
140	x	182	128	161	36	32	13,0	25	12	6140	119,5	110	213	12	M6	2,4	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 ISO 4014/4017 - 10.9			
d	x	D	d_w	d_1	L	L_1	L_2	L_3	T_A	T	F_{ax}	P	σv	n_{Sc}	D_G	Gw	T_{max}
mm			mm	mm	mm	mm	mm	mm	Nm	Nm	kN	N/mm²	N/mm²	Stück	mm	kg	Nm
			135							6280	116,0		194				7840
150	x	194	138	171	36	32	13,0	25	12	6730	121,0	103	200	12	M6	2,7	8420
			140							7050	125,0		206				8810
			142							6360	111,0		179				7940
160	x	204	145	181	36	32	13,0	25	12	6800	117,0	96	182	12	M6	2,8	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	**L_2**	= Thrust ring width	**P**	= Hub surface pressure
D	= Outer diameter	**L_3**	= 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
d_1	= 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
L_1	= 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 above	d_w up to	ISO	Max. clearance S 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 $R_a \leq 3{,}2$ 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 MoS_2 (μ_{tot}= 0,1). The tapered cones are lubricated using MoS_2 (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.

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

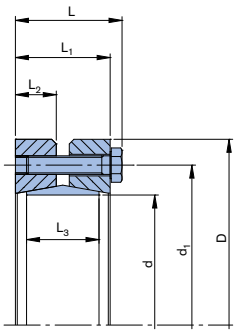
Shrink Discs

RINGFEDER® RfN 4091

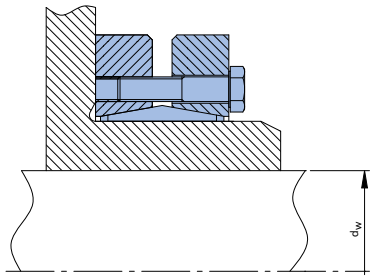
Heavy series for the highest torque

2-part | **3-part**

Dimensions



Location



Shrink Discs dimensions											Transmissible torques or axial forces				Locking screws ISO 4014/4017 - 10.9			
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	Gw	T_{max}
mm			mm	mm	mm	mm	mm	mm	mm	Nm	Nm	kN	N/mm²	N/mm²	Stück	mm	kg	Nm
			38								1800	106		410				2250
50	x	95	40	73	44,5	39	17	30	23	25	2100	115	285	447	7	M8	1,4	2625
			42								2400	124		511				3000
			42								2250	122		404				2813
55	x	105	45	78	44,5	39	17	30	23	28	2700	135	290	457	7	M8	1,7	3375
			48								3200	148		574				4000
			48								2950	134		376				3688
62	x	115	50	85	44,5	39	17	30	23	30	3400	142	276	401	7	M8	2	4250
			52								3600	145		458				4500
			50								3600	147		334				4500
68	x	118	55	93	49	44	19	34	27	30	4600	168	260	362	8	M8	2,1	5750
			60								5700	190		475				7125
			55								4600	193		403				5750
75	x	145	60	105	53	46	20	36	27	59	5700	221	302	437	7	M10	3,8	7125
			65								7000	249		540				8750
			60								5700	200		379				7125
80	x	145	65	105	53	46	20	36	27	59	7000	226	283	413	7	M10	3,6	8750
			70								8400	253		510				10500
			65								6700	217		339				8375
90	x	160	70	116	57	50	22	40	29	59	8100	243	259	352	8	M10	4,8	10125
			75								9600	269		395				12000
			70								8800	265		334				11000
100	x	170	75	126	61	54	23	44	32	59	10000	293	265	342	10	M10	5,6	12500
			80								12200	321		368				15250

To continue see next page

Shrink Discs RINGFEDER® RfN 4091

Shrink Discs dimensions											Transmissible torques or axial forces				Locking screws ISO 4014/4017 - 10.9			
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	Gw	T_{max}
mm			mm	mm	mm	mm	mm	mm	mm	Nm	Nm	kN	N/mm²	N/mm²	Stück	mm	kg	Nm
			75								11000	308		316				13750
110	x	185	80	138	67	60	26	50	35	59	12900	338	254	321	12	M10	7,6	16125
			85								14700	352		360				18375
			85								15000	355		331				18750
125	x	215	90	160	73	65	28	55	37,5	100	17500	388	248	331	10	M12	11	21875
			95								20000	422		337				25000
			90								18800	420		330				22500
135	x	212	95	172	85	77	32	60	45	100	21600	456	251	329	12	M12	10,7	27000
			105								27800	531		338				34750
			90								36700	817		423				45850
140	x	300	100	220	106	96	42	80	54	250	47000	942	360	433	12	M16	35,5	58750
			110								58700	1096		470				73350
			105								28900	551		310				36100
155	x	263	110	197	91,5	84	35	66	45	100	32400	590	248	311	15	M12	19,6	40500
			115								36200	630		314				45250
			115								41000	740		324				51250
165	x	290	120	210	98	88	38	72	49	250	46000	785	270	328	10	M16	26	57500
			125								50700	815		344				63375
			125								72800	1165		367				91000
175	x	300	130	220	124	114	50	92	59	250	79900	1230	301	374	15	M16	36,5	99850
			135								87300	1294		386				109100
			135								72000	1100		327				90000
185	x	330	140	236	122	112	50	92	61	250	78000	1150	263	334	14	M16	47	97500
			145								86000	1200		345				107500
			135								95100	1409		386				118850
190	x	350	140	239	129	116,5	50	92	62	470	103400	1478	331	392	12	M20	55	129250
			155								130600	1685		440				163250
			140								75000	1075		310				93750
195	x	350	150	246	122	112	50	92	63,5	250	88000	1180	250	319	14	M16	53	110000
			155								96000	1235		330				120000
			145								85000	1170		317				106250
200	x	350	150	246	122	112	50	92	63,5	250	92500	1230	261	322	15	M16	50	115625
			155								100000	1290		330				125000
			160								127000	1590		309				158750
220	x	370	165	270	144	134	60	114	74,5	250	136000	1650	255	316	20	M16	65	170000
			170								146500	1720		325				183125
			170								155000	1820		305				193750
240	x	405	180	295	157	144	65	120	79,5	490	176000	1960	261	315	15	M20	87	220000
			190								198000	2080		341				247500
			190								213000	2260		308				266250
260	x	430	200	321	173	160	72	136	87,5	490	240000	2420	255	322	18	M20	100	300000
			210								268000	2580		346				335000
			210								285000	2740		310				356250
280	x	460	220	346	185	172	78	148	96	490	320000	2910	254	327	21	M20	132	400000
			230								355000	3090		356				443750
			230								341000	2960		298				426250
300	x	485	240	364	189	176	80	152	98	490	376000	3130	242	316	22	M20	140	470000
			245								394000	3215		327				492500

To continue see next page

Shrink Discs RINGFEDER® RfN 4091

Shrink Discs dimensions											Transmissible torques or axial forces				Locking screws ISO 4014/4017 - 10.9			
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	Gw	T_{max}
mm			mm	mm	mm	mm	mm	mm	mm	Nm	Nm	kN	N/mm²	N/mm²	Stück	mm	kg	Nm
			240								378000	3150		282				472500
320	x	520	250	386	196,5	184	82	160	102	490	415000	3325	235	294	24	M20	165	518750
			260								451000	3470		318				563750
			250								489500	3910		295				611875
340	x	570	260	420	215	200	92	176	110	840	530000	4075	253	310	21	M24	240	662500
			270								578000	4275		326				722500
			270								556000	4122		304				695000
350	x	580	280	425	215	200	92	176	110	840	604000	4320	247	320	21	M24	247	755000
			285								629000	4415		331				786250
			280								612000	4370		303				765000
360	x	590	290	432	219	204	92	180	114,5	840	663000	4570	245	320	22	M24	250	828750
			295								689000	4670		332				861250
			290								618000	4270		279				772500
380	x	645	300	458	219	204	92	180	114,5	840	668000	4455	233	290	22	M24	320	835000
			310								719000	4645		307				898750
			300								708000	4715		284				885000
390	x	660	310	468	227	212	96	188	118,5	840	762000	4910	236	297	24	M24	350	952500
			320								814500	5090		318				1018125
			315								765000	4855		285				956250
400	x	680	320	480	227	212	96	188	118,5	840	788000	4927	231	294	24	M24	370	985000
			330								845000	5125		312				1056250
			330								999000	6055		302				1248750
420	x	690	340	504	253	238	111	214	131,5	840	1068000	6285	241	318	30	M24	410	1335000
			350								1140000	6515		342				1425000
			340								1058000	6230		283				1322500
440	x	750	350	527	269	252	115	224	138,5	1250	1130000	6460	231	295	24	M27	540	1412500
			360								1204000	6690		312				1505000
			360								1320000	7440		312				1650000
460	x	770	370	547	269	252	115	224	141	1250	1420000	7700	257	326	28	M27	540	1775000
			380								1500000	7950		346				1875000
			380								1535000	8080		302				1918750
480	x	800	390	580	291	274	128	246	152	1250	1626000	8340	241	318	30	M27	650	2032500
			400								1720000	8600		340				2150000
			400								1750000	8750		309				2187500
500	x	850	410	600	291	274	128	246	152	1250	1840000	8980	246	328	32	M27	750	2300000
			420								1940000	9250		350				2425000

More sizes on request

To continue see next page

Shrink Discs RINGFEDER® RfN 4091

Explanation

d	= Inner diameter	**L_2**	= Thrust ring width	**P**	= Hub surface pressure
D	= Outer diameter	**L_3**	= 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
d_1	= 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
L_1	= 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 above	d_w up to	ISO	Max. clearance S 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 $R_a \leq 3{,}2$ 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 MoS_2 (μ_{tot}= 0,1). The tapered cones are lubricated using MoS_2 (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.

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

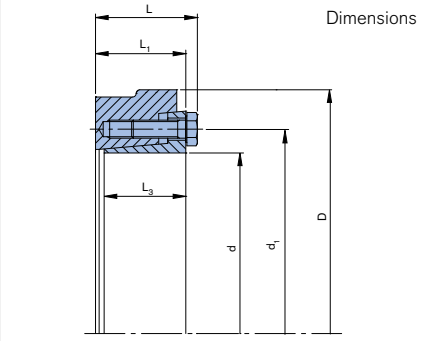
RINGFEDER POWER TRANSMISSION

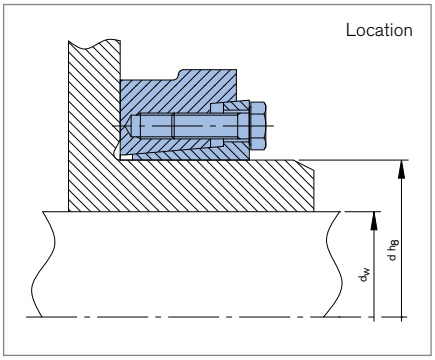
Shrink Discs

RINGFEDER® RfN 4161

Standard series for high torque

2-part | 3-part





Shrink Discs dimensions									Transmissible torques or axial forces		Locking screws ISO 4014/4017 - 12.9		
d	x	D	d_w	d_1	L	L_1	L_3	T_A	T	F_{ax}	D_G	Gw	T_{max}
mm			mm	mm	mm	mm	mm	Nm	Nm	kN	mm	kg	Nm
			15						80	11			88
18	x	44	16	30	19	15	13	12	110	14	M6	0,15	121
			---						---	---			---
			17						150	18			165
20	x	47	18	32	19,3	15,3	13,5	12	180	20	M6	0,2	198
			---						---	---			---
			19						160	17			176
24	x	50	20	36	22	18	15	12	210	20	M6	0,2	231
			22						280	25			308
			20						230	23			253
26	x	51,5	22	38	22	18	16	12	300	27	M6	0,2	330
			24						310	29			341
			24						270	23			297
30	x	60	25	44	24	20	17	12	320	25	M6	0,3	352
			26						360	28			396
			27						510	37			561
36	x	72	30	52	27,3	22	18,5	35	710	47	M8	0,5	781
			33						950	58			1045
			27						480	36			528
38	x	72	30	54	27,3	22	18,5	35	650	43	M8	0,5	715
			33						860	52			946
			34						810	48			891
40	x	80	35	61	29,3	24	20,5	35	880	50	M8	0,7	968
			37						960	52			1056

To continue see next page

Shrink Discs RINGFEDER® RfN 4161

Shrink Discs dimensions									Transmissible torques or axial forces		Locking screws ISO 4014/4017 - 12.9		
d	x	D	d_w	d_1	L	L_1	L_3	T_A	T	F_{ax}	D_G	Gw	T_{max}
mm			mm	mm	mm	mm	mm	Nm	Nm	kN	mm	kg	Nm
			35						800	52			880
44	x	80	36	61	29,3	24	20,5	35	890	57	M8	0,6	979
			37						1050	60			1155
			38						1500	79			1650
50	x	90	40	68	31,3	26	22	35	1700	87	M8	0,8	1870
			42						2000	94			2200
			42						1600	78			1760
55	x	100	45	72	34,3	29	25	35	2000	88	M8	1,1	2200
			48						2400	99			2640
			48						2200	92			2420
60	x	110	50	80	34,3	29	24,5	35	2500	98	M8	1,3	2750
			52						2700	105			2970
			48						2200	92			2420
62	x	110	50	80	34,3	29	24,5	35	2500	98	M8	1,3	2750
			52						2700	105			2970
			50						2400	94			2640
68	x	115	55	86	34,3	29	24,5	35	3000	111	M8	1,4	3300
			60						3800	128			4180
			55						3700	135			4070
75	x	138	60	100	37,5	31	26,3	70	4700	156	M10	2,3	5170
			65						5800	177			6380
			60						4200	141			4620
80	x	141	65	104	37,5	31	26	70	5200	160	M10	2,3	5720
			70						6300	180			6930
			65						5900	186			6490
85	x	155	70	114	45	38	34	70	7200	204	M10	3,7	7920
			75						8500	227			9350
			65						5900	182			6490
90	x	155	70	114	45	38	33	70	7200	204	M10	3,5	7920
			75						8500	227			9350
			70						7400	213			8140
95	x	170	75	124	49,5	43	37,5	70	8900	236	M10	4,9	9790
			80						10400	260			11440
			80						15000	370			16500
100	x	185	85	139	56,5	49	43	121	17300	400	M12	6,7	19030
			90						19600	430			21560
			80						13900	348			15290
105	x	185	85	139	56,5	49	43	121	16100	380	M12	6,4	17710
			90						18600	434			20460
			80						15500	380			17050
110	x	185	85	139	56,5	49	43	121	17800	410	M12	6,1	19580
			90						20000	440			22000
			85						17200	405			18920
115	x	200	90	150	62,5	55	48	121	19900	443	M12	8	21890
			95						22900	482			25190
			85						17300	405			18920
120	x	200	90	150	62,5	55	48	121	19900	443	M12	7,7	21890
			95						22900	482			25190

To continue see next page

Shrink Discs RINGFEDER® RfN 4161

Shrink Discs dimensions									Transmissible torques or axial forces		Locking screws ISO 4014/4017 - 12.9		
d	x	D	d_w	d_1	L	L_1	L_3	T_A	T	F_{ax}	D_G	Gw	T_{max}
mm			mm	mm	mm	mm	mm	Nm	Nm	kN	mm	kg	Nm
			90						19200	420			21120
125	x	215	95	157	60,5	53	46,5	121	21700	450	M12	9	23870
			100						24400	480			26840
			95						25900	540			28490
130	x	230	100	172	65,5	58	51	121	29000	580	M12	11,5	31900
			110						36000	650			38600
			95						21450	452			23595
135	x	230	100	172	67	58	51	190	24300	486	M14	11,1	26730
			110						30500	555			33500
			100						25300	500			27830
140	x	230	105	172	67	58	51	190	28000	530	M14	10,7	30800
			115						35600	610			39160
			110						37000	673			40700
150	x	263	120	190	71	62	55	190	45300	754	M14	16,3	49830
			125						49700	795			54670
			110						33000	600			36300
155	x	263	115	190	71	62	55	190	36600	637	M14	15,8	40260
			120						40500	674			44550
			120						57300	950			63030
160	x	290	130	200	78	68	61	290	66700	1020	M16	22,3	73370
			135						72500	1070			79750
			120						56500	940			62150
165	x	290	125	200	78	68	61	290	61500	980	M16	21,7	67650
			135						72500	1070			79750
			130						61000	938			67100
170	x	300	140	210	78,5	68,5	61	290	72300	1023	M16	22,3	79530
			145						78400	1081			86240
			130						61500	900			67650
175	x	300	135	210	78,5	68,5	61	290	67000	990	M16	21,7	73700
			140						72500	1030			79750
			140						86500	1237			95150
180	x	320	150	224	97	87	77,5	290	101400	1352	M16	34	111540
			155						109300	1401			120230
			140						96000	1250			105600
185	x	320	145	224	97	87	77,5	290	104000	1350	M16	33,1	114400
			155						120000	1550			132000
			150						92000	1250			101200
190	x	320	155	238	96	86	76	290	99000	1300	M16	32	108900
			165						113500	1400			124850
			150						103000	1374			113300
195	x	340	160	238	95,5	85,5	77	290	119300	1491	M16	35	131230
			165						126100	1529			138710
			150						108000	1450			118800
200	x	340	155	238	95,5	85,5	77	290	116000	1500	M16	34	127600
			160						124000	1550			136400

More sizes on request

To continue see next page

Shrink Discs RINGFEDER® RfN 4161

Explanation

d	= Inner diameter	**L_1**	= Overall length (without screws)	**n_{Sc}**	= Quantity of screws
D	= Outer diameter	**L_3**	= Width of ring	**D_G**	= Thread
d_w	= Solid shaft diameter	**T_A**	= Max tightened torque of the clamping screws	**Gw**	= Weight
d_1	= 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 above	d_w up to	ISO	Max. clearance S 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 $R_a \leq 3{,}2$ µm
- Tolerances: For shaft see table
- When using a hollow shaft instead of a solid shaft please contact our Engineering-Team.
- Hub with yield strength Rp0,2 ≥ 360 N/mm²
- 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_2 (μ_{tot}= 0,1). The tapered cones are lubricated using MoS_2 (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.

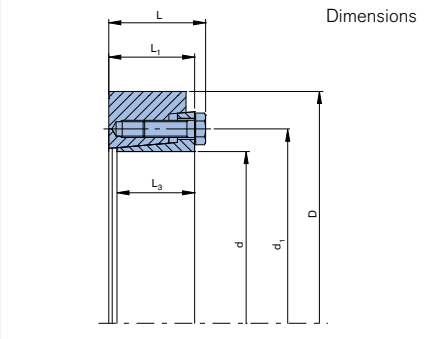
Further information on
RINGFEDER® RfN 4161 on
www.ringfeder.com

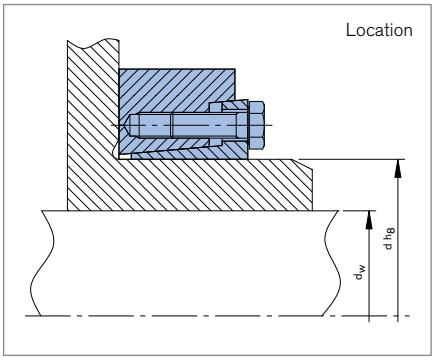
Shrink Discs

RINGFEDER® RfN 4181

Standard series for the highest torque

2-part | 3-part





Shrink Discs dimensions									Transmissible torques or axial forces		Locking screws ISO 4014/4017 - 12.9		
d	x	D	d_w	d_1	L	L_1	L_3	T_A	T	F_{ax}	D_G	Gw	T_{max}
mm			mm	mm	mm	mm	mm	Nm	Nm	kN	mm	kg	Nm
			160						160000	2000			176000
220	x	370	170	270	115,8	103,3	87	570	182000	2150	M20	52,11	200200
			180						206000	2300			226600
			170						190000	2250			209000
240	x	405	180	296	121,4	108,9	92	570	215000	2400	M20	66,58	236500
			200						269000	2700			295900
			190						247000	2600			271700
260	x	430	200	318	128,4	115,9	102	580	277000	2750	M20	77,29	304700
			220						340000	3100			374000
			210						282000	2686			310200
280	x	460	220	340	146,4	133,9	121	570	313000	2845	M20	103,28	344300
			240						380000	3167			418000
			220						385000	3500			423500
300	x	485	230	360	154,1	139,1	122	980	425000	3700	M24	117,05	467500
			250						505000	4050			555500
			240						444000	3700			488400
320	x	520	250	380	156,6	141,6	124	980	488000	3904	M24	132,1	536800
			270						580000	4296			638000
			250						564000	4500			620400
340	x	570	260	402	167,5	152,5	135	980	612000	4700	M24	184,25	673200
			270						668000	4950			734800
			270						658000	4850			723800
360	x	590	280	424	182,7	167,7	150	980	712000	5100	M24	208,11	783200
			300						825000	5500			907500

To continue see next page

Shrink Discs RINGFEDER® RfN 4181

Shrink Discs dimensions									Transmissible torques or axial forces		Locking screws ISO 4014/4017 - 12.9		
d	x	D	d_w	d_1	L	L_1	L_3	T_A	T	F_{ax}	D_G	Gw	T_{max}
mm			mm	mm	mm	mm	mm	Nm	Nm	kN	mm	kg	Nm
			290						735000	5069			808500
380	x	640	300	444	185,1	168,1	148	1450	790000	5266	M27	247,5	869000
			310						845000	5452			929500
			290						903000	6250			993300
390	x	650	300	470	186,3	167,6	144	1900	970000	6450	M30	259,55	1067000
			320						1101000	6950			1221000
			320						969000	6056			1065900
420	x	670	330	495	203,9	186,9	166	1450	1038000	6291	M27	284,75	1141800
			350						1183000	6762			1301300
			340						1212000	7129			1333200
440	x	740	350	518	212,9	195,9	178	1450	1292000	7383	M27	398	1421200
			370						1460000	7892			1606000
			380						1815000	9552			1996500
480	x	790	390	552	243,7	225,0	201	1900	1920000	9845	M30	495,4	2112000
			410						2118000	10331			2329800
			400						2054000	10270			2259400
500	x	835	410	572	238,7	220,0	198	1900	2145000	10463	M30	626,3	2359500
			430						2377000	11055			2614700
			430						2397000	11150			2636700
530	x	850	440	608	260,0	240,0	206	1900	2520520	11457	M30	653,4	2772572
			460						2777417	12076			3055159
			450						2545000	11311			2799500
560	x	940	460	632	260,0	240,0	206	1900	2670006	11609	M30	748,7	2937006
			480						2929521	12206			3222473
			470						4012000	17072			4413200
590	x	960	480	654	380,0	361,0	286	1900	4199188	17497	M30	1173,9	4619106
			500						4587043	18348			5045747
			500						3402000	13608			3742200
620	x	970	520	720	304,0	285,0	244	1900	3708000	14261	M30	886,7	4078800
			540						4028000	14918			4430800
			530						5758000	21750			6333800
660	x	1040	550	728	418,0	396,0	310	3500	6236900	22680	M36	1448,2	6860590
			570						6735919	23635			7409510
			560						4518700	16138			4970570
700	x	1140	580	815	315,0	294,0	260	2700	4880000	16828	M33	1467,5	5368000
			600						5258000	17527			5783800
			600						7669000	25563			8435900
750	x	1150	620	900	340,0	428,0	360	3500	8228643	26544	M36	1847,5	9051507
			650						9106895	28021			10017584
			640						6897960	21226			7587756
800	x	1230	660	935	373,0	352,0	296	2700	7378000	22358	M33	1894,4	8115800
			700						8390500	23973			9229550

To continue see next page

Shrink Discs RINGFEDER® RfN 4181

Explanation

d	= Inner diameter	**L_1**	= Overall length (without screws)	**n_{Sc}**	= Quantity of screws
D	= Outer diameter	**L_3**	= Width of ring	**D_G**	= Thread
d_w	= Solid shaft diameter	**T_A**	= Max tightened torque of the clamping screws	**Gw**	= Weight
d_1	= 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 above	d_w up to	ISO	Max. clearance S 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 $R_a \leq 3{,}2$ µm
- Tolerances: For shaft see table
- When using a hollow shaft instead of a solid shaft please contact our Engineering-Team.
- Hub with yield strength Rp0,2 ≥ 360 N/mm²
- 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_2 (μ_{tot}= 0,1). The tapered cones are lubricated using MoS_2 (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.

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

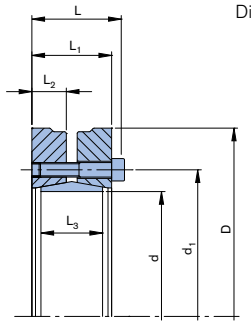
Shrink Discs

RINGFEDER® RfN 4061 stainless steel

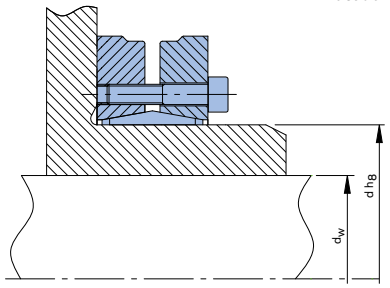
Corrosion resistant series for high torques

2-part | **3-part**

Dimensions



Location



Shrink Discs dimensions										Transmissible torques or axial forces				High-strength special screws ISO 4762			
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	Gw	T_{max}
mm			mm	mm	mm	mm	mm	mm	Nm	Nm	kN	N/mm²	N/mm²		mm	kg	Nm
			10							30	8		415				37,5
14	x	37	11	24	16	12	5	9	2,4	37	8	278	474	3	M4	0,1	46
			12							48	10		557				60
			12							70	15		509				90
16	x	41	13	27	20	15	6,25	12	4	90	18	336	575	4	M5	0,1	110
			14							110	20		774				130
			14							90	16		459				110
18	x	44	15	29	20	15	6,25	12	4	100	18	299	523	4	M5	0,2	130
			16							120	20		705				160
			15							110	20		462				140
20	x	46	16	32	22,5	17,5	7	12	4	140	22	336	497	5	M5	0,2	170
			17							160	24		580				200
			16							200	31		534				250
21	x	50	17	36	24	19	8	15	5	230	34	384	602	6	M5	0,2	290
			18							260	37		746				330
			19							240	32		495				300
24	x	50	20	36	24	19	8	15	5	270	35	336	554	6	M5	0,2	340
			21							300	38		679				390
			24							350	38		390				450
30	x	60	25	44	26,5	21,5	8,5	17	5	400	41	261	426	7	M5	0,2	500
			26							440	43		492				560
			28							590	53		390				730
36	x	72	30	52	29,5	23,5	10	18	12	690	58	303	438	5	M6	0,5	860
			31							700	58		536				890

To continue see next page

Shrink Discs RINGFEDER® RfN 4061 stainless steel

Shrink Discs dimensions									Transmissible torques or axial forces				High-strength special screws ISO 4762			
d	x	D	d_w	d_1	L	L_1	L_2	L_3	T_A	T	F_{ax}	P	σv	n_{Sc}	D_G	Gw	T_{max}
mm			mm	mm	mm	mm	mm	mm	Nm	Nm	kN	N/mm²	N/mm²		mm	kg	Nm
			29							700	62		378				890
38	x	72	30	55	32	26	10	21	12	770	65	295	394	6	M6	0,5	970
			31							780	63		474				980
			30							720	61		375				900
40	x	72	31	57	30,5	24,5	10,5	19	12	730	59	310	450	6	M6	0,5	910
			32							790	62		460				990
			32							800	63		429				1000
44	x	80	35	63	32	26	11	20	12	1000	73	312	444	7	M6	0,5	1250
			36							1050	76		458				1350
			36							900	65		371				1150
48	x	80	38	68	32	26	11	22	12	1050	72	260	380	7	M6	0,6	1350
			40							1200	78		403				1550
			38							1350	89		418				1650
50	x	90	40	70	33,5	27,5	11,5	22,5	12	1500	96	314	433	9	M6	0,9	1900
			42							1700	103		467				2150
			42							1300	78		343				1600
55	x	100	45	75	36,5	30,5	12	23	12	1550	87	248	359	8	M6	1,1	1950
			48							1800	96		410				2300
			48							2400	126		407				3000
62	x	110	50	86	36,5	30,5	12,5	23	12	2650	133	330	419	12	M6	1,3	3300
			52							2800	136		482				3500
			50							1900	95		314				2350
68	x	115	55	86	36,5	30,5	12	23,5	12	2250	104	245	367	10	M6	1,4	2850
			60							2850	121		411				3600
			55							2650	121		377				3300
75	x	138	60	100	40,5	32,5	13	25	30	3300	139	277	382	7	M8	2,3	4150
			65							4050	158		416				5100
			60							3200	126		353				4000
80	x	145	65	100	40,5	32,5	13	25	30	3900	143	259	358	7	M8	2,5	4900
			70							4600	160		392				5750
			60							4850	189		404				6050
85	x	155	65	114	48,5	40,5	16	30	30	5800	212	325	407	11	M8	3,5	7250
			70							6800	235		427				8500
			65							4800	174		353				6000
90	x	155	70	114	47	39	16	30	30	6050	195	274	356	10	M8	3,3	7550
			75							7300	215		372				9150
			65							5350	195		349				6700
95	x	170	70	127	55,1	47,1	19	34	30	6750	217	275	349	12	M8	4,7	8450
			75							8150	240		355				10200
			70							6950	202		331				8700
100	x	170	75	127	55,1	47,1	19	34	30	7600	223	261	331	12	M8	4,5	9500
			80							9100	245		338				11350
			75							8150	259		316				10150
110	x	185	80	145	63	53	21,5	42	59	10100	285	254	316	10	M10	6,3	12600
			85							12200	296		357				15250
			80							9500	267		302				11850
115	x	185	90	145	66	56	21,5	42	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 stainless steel

Shrink Discs dimensions										Transmissible torques or axial forces				High-strength special screws ISO 4762			
d	x	D	d_w	d_1	L	L_1	L_2	L_3	T_A	T	F_{ax}	P	σv	n_{Sc}	D_G	Gw	T_{max}
mm			mm	mm	mm	mm	mm	mm	Nm	Nm	kN	N/mm²	N/mm²		mm	kg	Nm
			85							11050	300		354				13800
125	x	215	90	160	64	54	23	42	59	13100	327	269	352	12	M10	8,7	16350
			95							15150	355		352				18950
			95							15100	365		336				18850
140	x	230	100	175	72,5	60,5	26	46	100	17550	395	263	335	10	M12	10,6	21900
			105							20000	424		335				25000
			115							31400	601		334				39300
165	x	290	120	210	87	71	31	56	250	35500	637	280	335	8	M16	21,7	44400
			125							39400	664		348				49250
			135							52500	786		307				65600
185	x	330	140	236	102,4	86,4	38,2	71	250	57350	828	246	310	10	M16	36	71650
			145							62400	870		314				78000
			140							65950	943		332				82450
195	x	350	150	246	102	86	38,2	71	250	77600	1035	280	338	12	M16	40	97000
			155							83750	1081		345				104700
			150							75000	1000		326				93750
200	x	350	155	246	102	86	38,2	71	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 stainless steel

Explanation

d	= Inner diameter	**L_3**	= 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	**Gw**	= Weight
d_1	= Pitch circle diameter	**F_{ax}**	= Transmissible axial force	**T_{max}**	= Max. transmissible torque
L_1	= Overall length (without screws)	**P**	= Hub surface pressure		
L_2	= 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

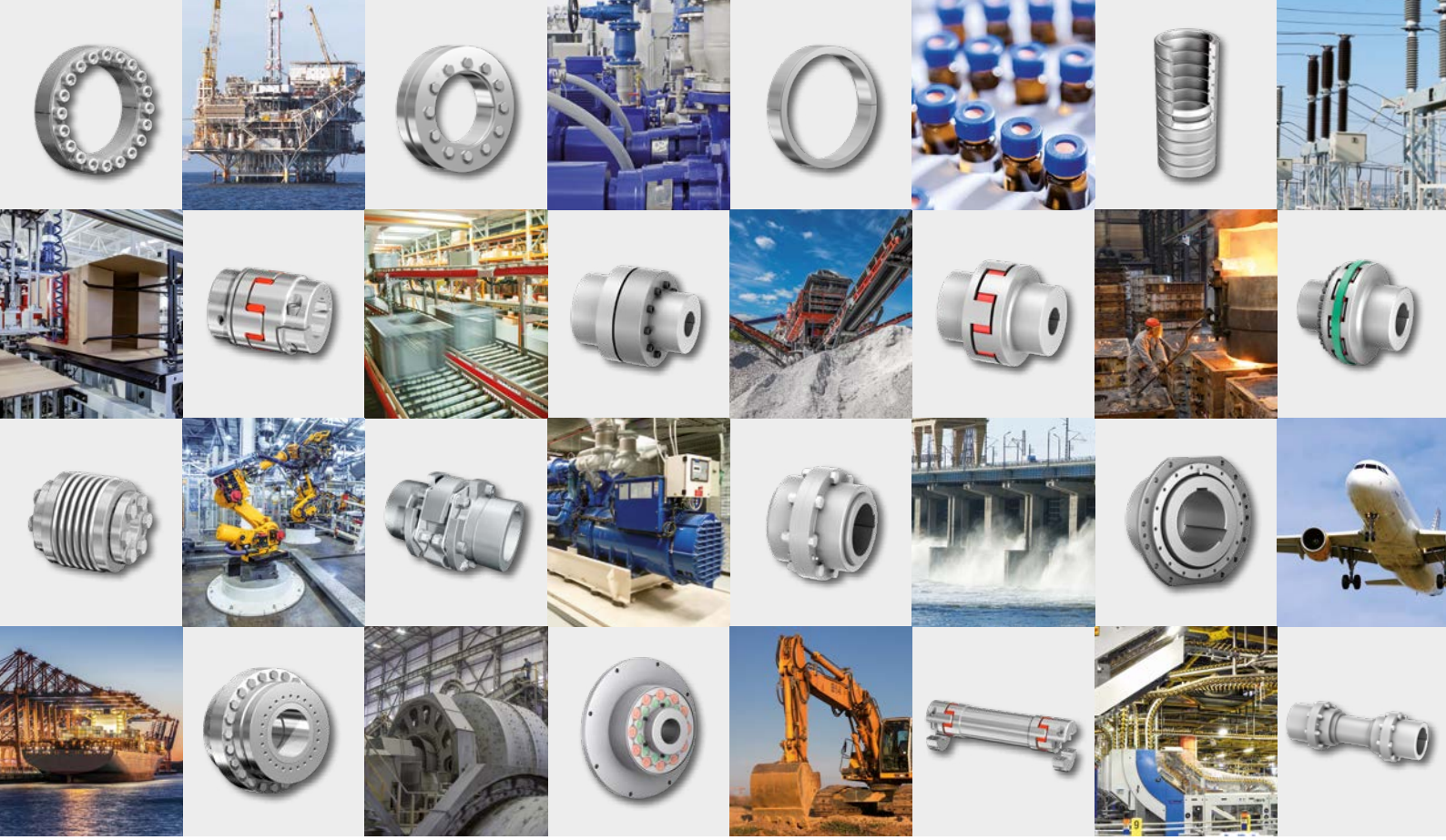
d_w above	d_w up to	ISO	Max. clearance S mm
6	10	H6/j6	0,011
10	18		0,014
18	30		0,017
30	50	H6/h6	0,032
50	80	H6/g6	0,048
80	120	H7/g6	0,069
120	180		0,079
180	250		0,090
250	315		0,101
315	400		0,111
400	500		0,123
500	630		0,136
630	800		0,154

Clearances considered for the calculation of the function values

Technical information

- Surface finishes: For shaft $R_a \leq 3{,}2$ 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 MoS_2 (μ_{tot}= 0,1). The tapered cones are lubricated using MoS_2 (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.

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



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