

# Shrink Discs



Shrink Discs



Shrink Discs stainless steel

EN 06.2022

Product Paper & Tech Paper



# Welcome

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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.

## On-site worldwide

We are there for you. Anytime, anywhere.

## Your expert partner

From development to the finished product.

Customer

Value

## Online calculation program

Always find the right solution.

# Your projects are our drive

## **Know-how:** Over 90 years of expertise.

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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.

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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.

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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](http://www.ringfeder.com)!

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

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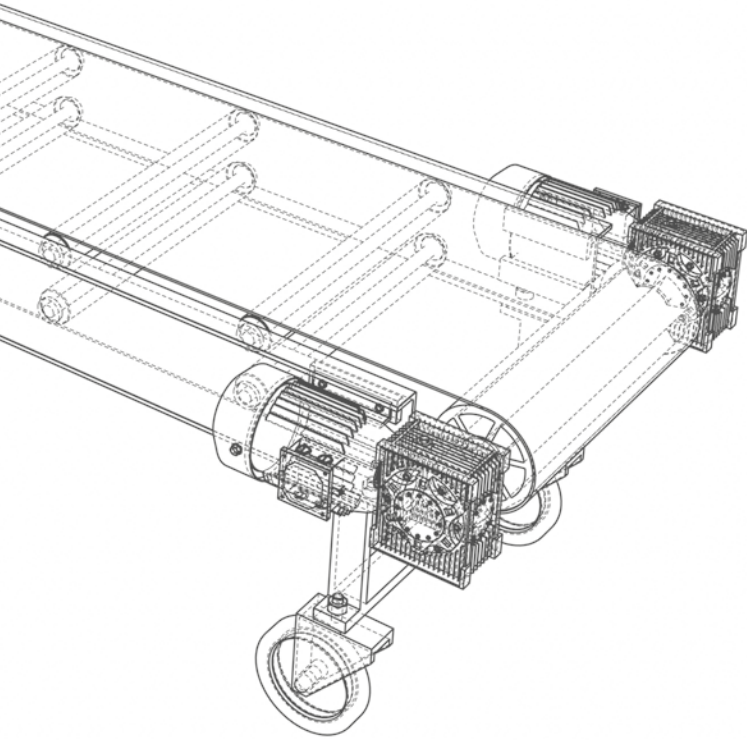
With our locations in Germany, the Czech Republic, the USA, Brazil, China and India as well as a worldwide service and partner network, we are there for you around the clock. This ensures our support for the successful completion of your projects at any time.

# 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 <sub>w</sub>		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	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<sub>w</sub>: **R<sub>a</sub> ≤ 3,2 μm**

For hub bore: **R<sub>a</sub> ≤ 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

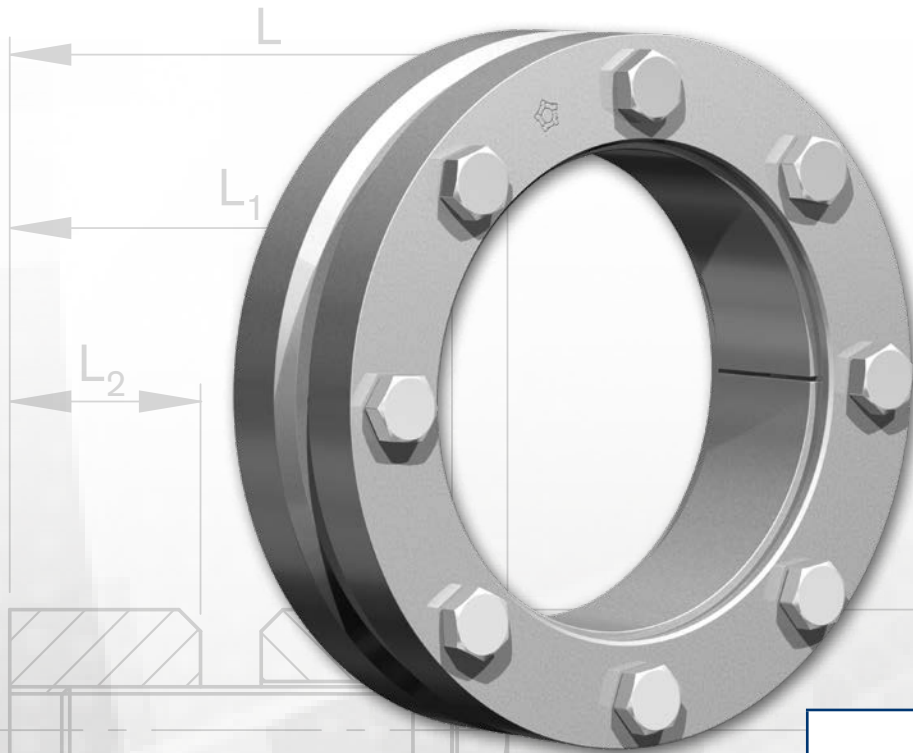
Three-part RINGFEDER® shrink discs are characterised by a steep double cone and transfer the required torque in a similar way to a taper interference fit. In contrast to this, however, the RINGFEDER® shrink discs can be simply and quickly assembled and disassembled. The shrink disc itself is not in the 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 carry out modifications at any time in the interests of technical progress.



RfN 4051

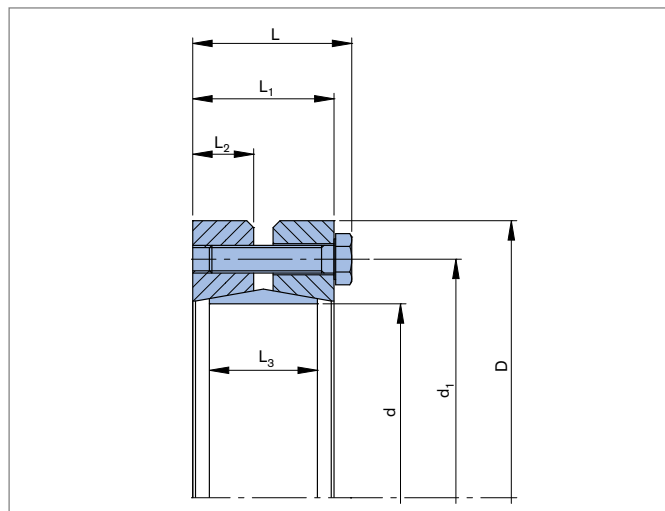
Further information on  
RINGFEDER® RfN 4051  
on [www.ringfeder.com](http://www.ringfeder.com)

2-part

3-part

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

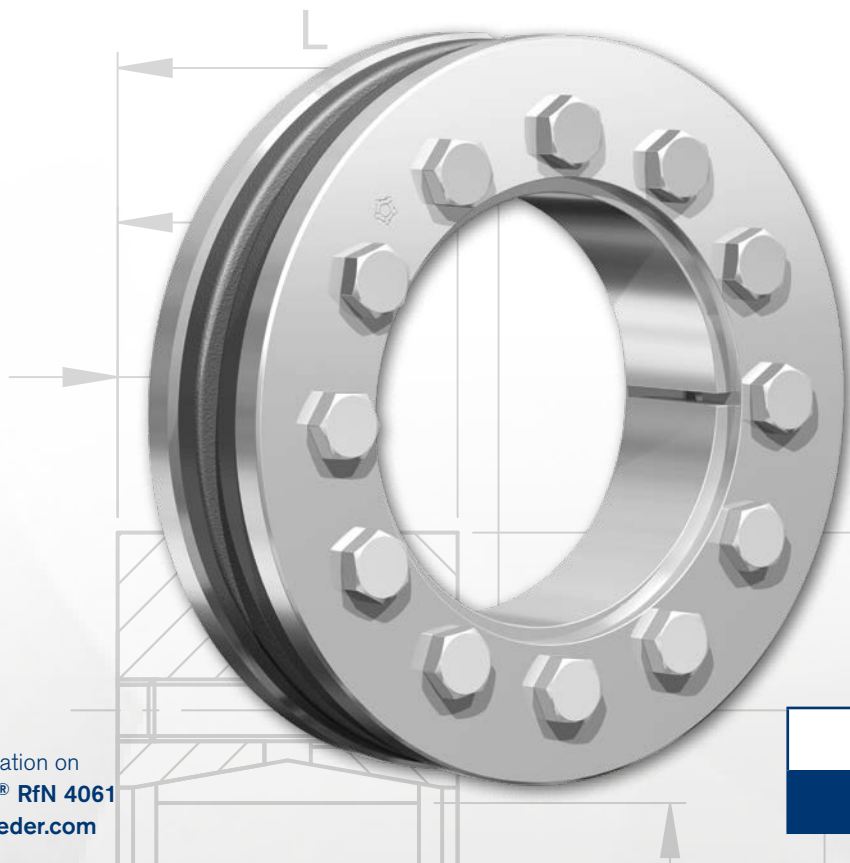
The RINGFEDER® RfN 4051 is a three-part shrink disc and serves to transfer low to moderate torque. The narrow pressure rings require only a very small space. The transferrable torque can be set in a targeted manner for the corresponding application by changing the screw tightening torque.



### 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.





RfN 4061

Further information on  
RINGFEDER® RfN 4061  
on [www.ringfeder.com](http://www.ringfeder.com)

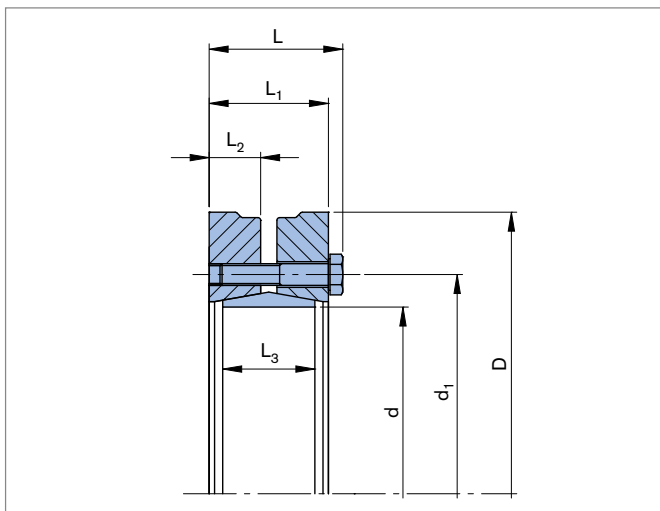
2-part

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

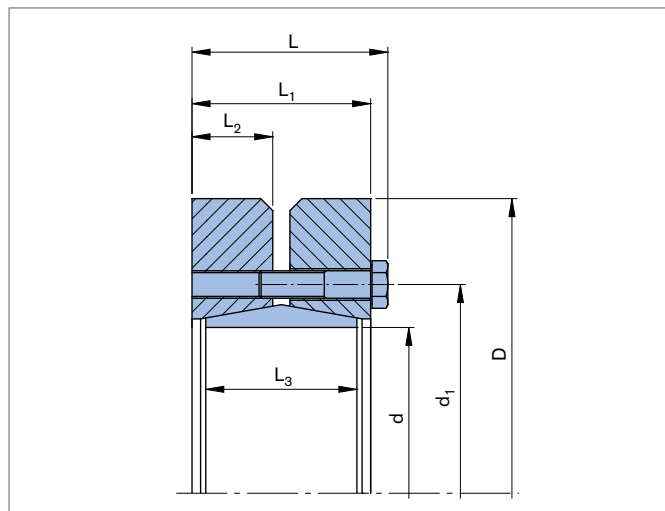
Further information on  
RINGFEDER® RfN 4071  
on [www.ringfeder.com](http://www.ringfeder.com)

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](http://www.ringfeder.com)

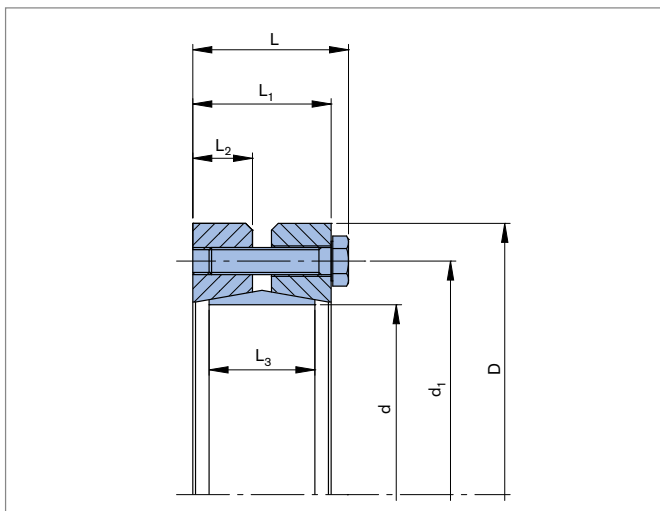
2-part

3-part

## Mini series for particularly light applications

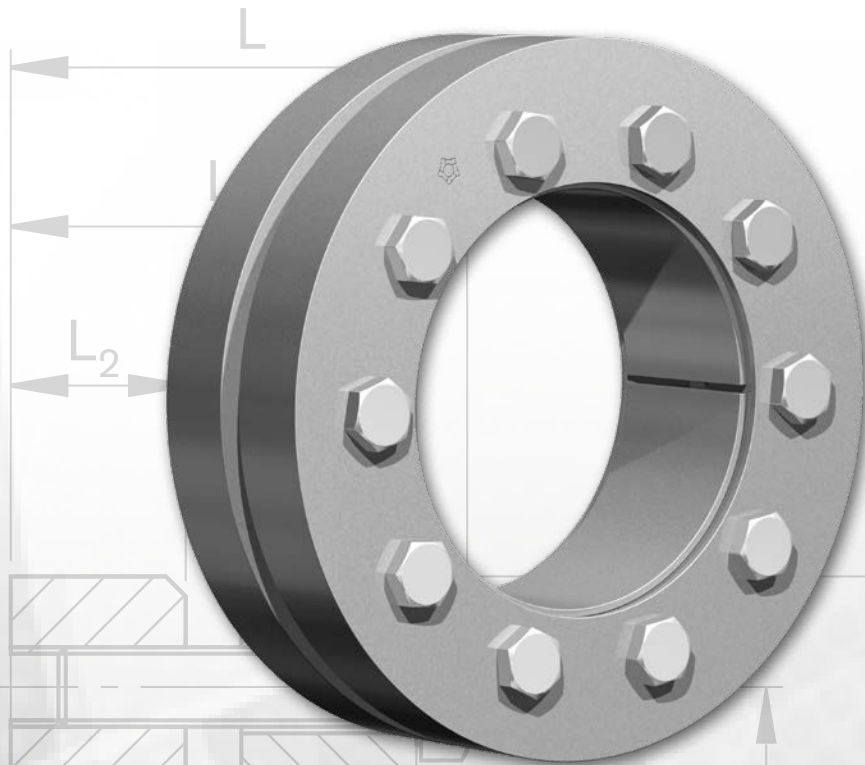
**Mini series with low moment of inertia, particularly for mechanical seals and small gears.**

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

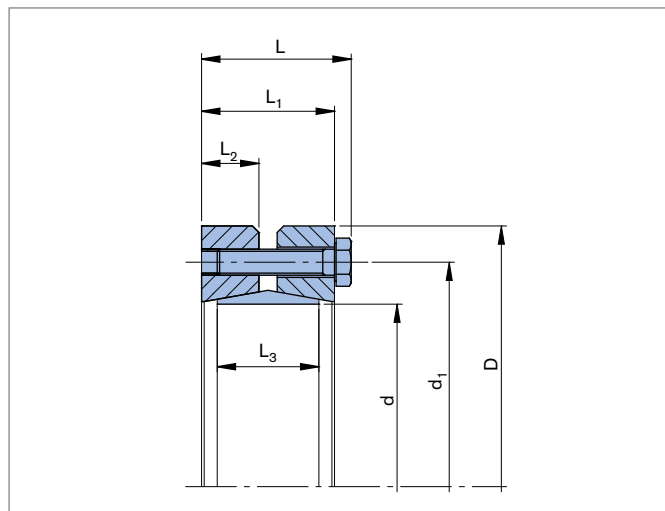
Further information on  
RINGFEDER® RfN 4091  
on [www.ringfeder.com](http://www.ringfeder.com)

2-part
3-part

## Heavy series for the highest torque

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

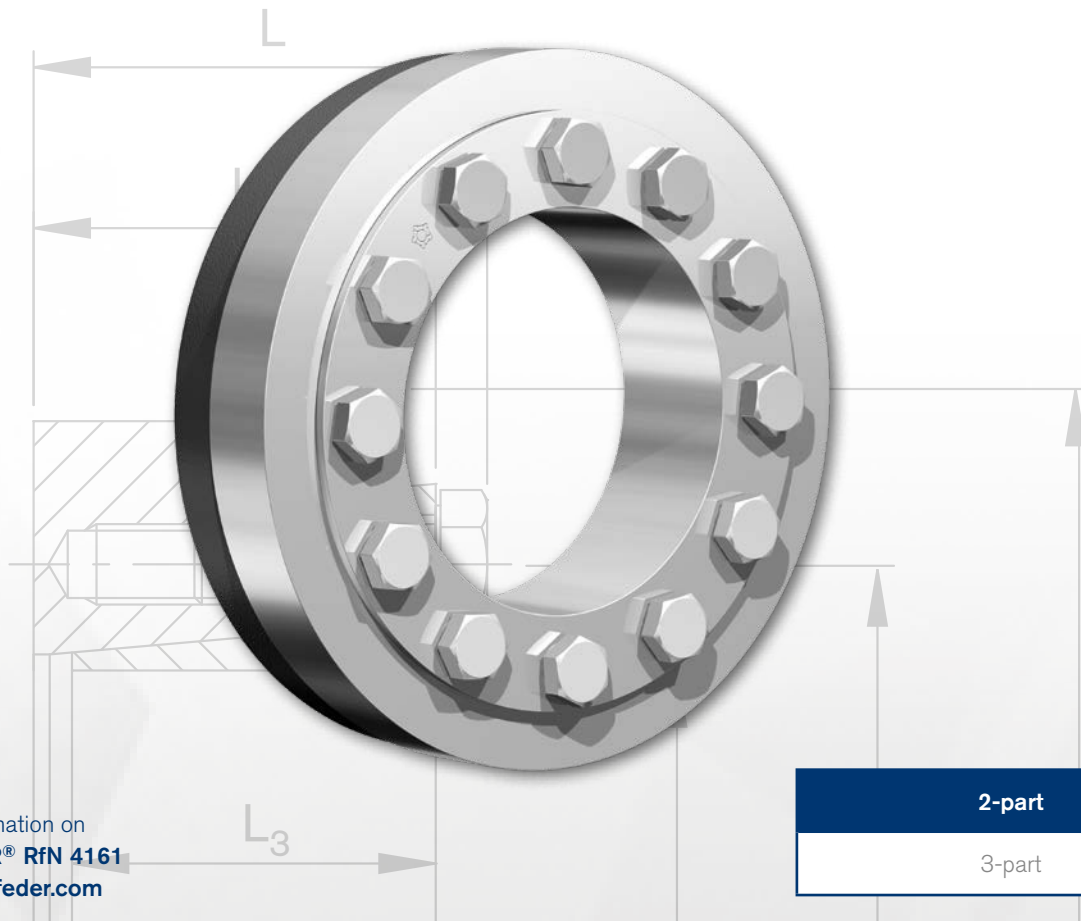
Its wider structure with particularly strong outer rings gives the RINGFEDER® RfN 4091 series the highest transfer values – even in applications that involve extremely static or dynamic loads. The preload force can be set targeted to the relevant application.



### 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.

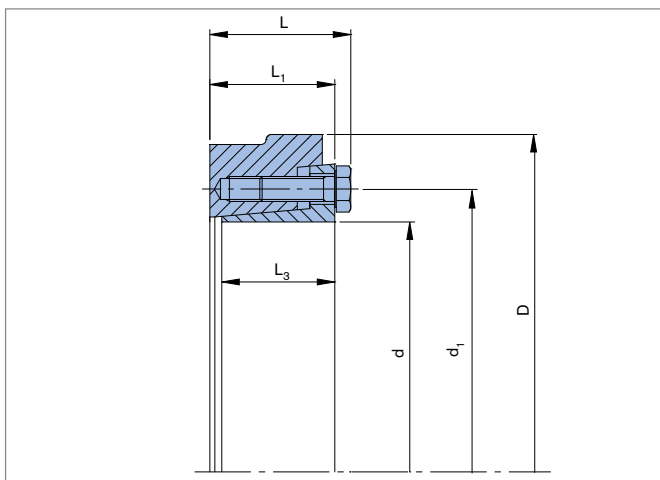
RfN 4161



Further information on  
RINGFEDER® RfN 4161  
on [www.ringfeder.com](http://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

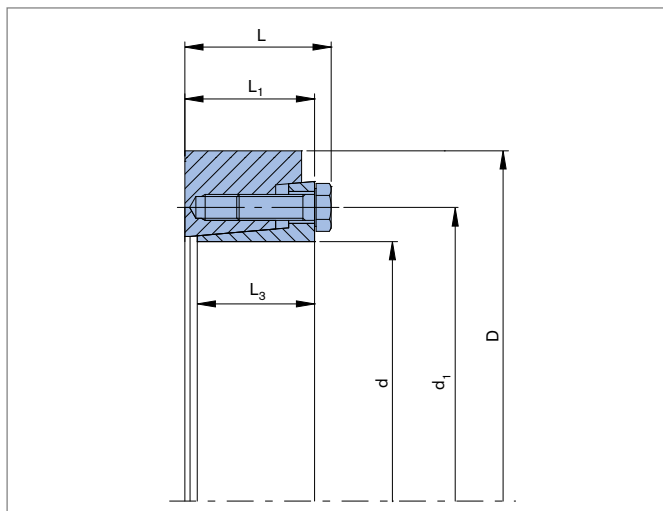
- **Standard design** – for high transmission values.
- **Slit inner ring** – low forces and pressures on hub and shaft.
- **Compensation of small tolerance errors** – please contact our engineers.
- **Maximum reliability** – suitable for static, dynamic and impact loads.
- **Simplified manufacture** – 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](http://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.



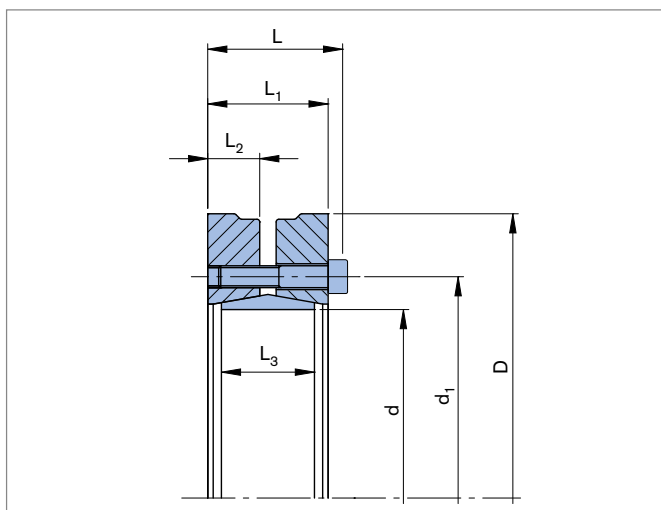
Further information on  
RINGFEDER® RfN 4061 stainless steel  
on [www.ringfeder.com](http://www.ringfeder.com)

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.



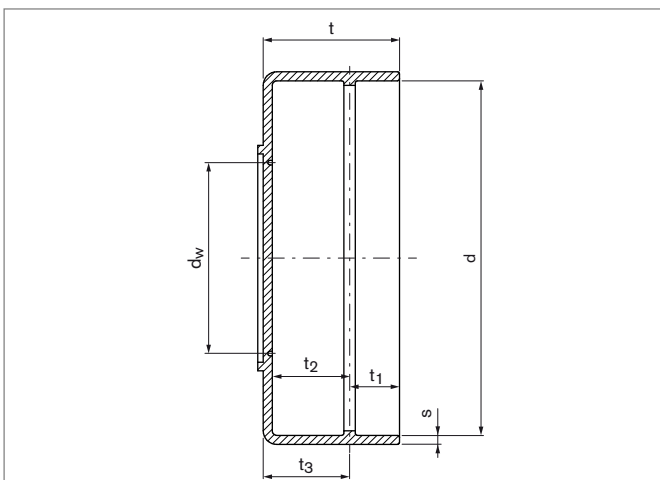
Further information on  
**RINGFEDER® Safety Covers**  
 on [www.ringfeder.com](http://www.ringfeder.com)

## Suited for Series RfN 4061 and RfN 4161

Specially developed and designed for shrink discs of the three-part series RINGFEDER® RfN 4061 as well as the two-part series RINGFEDER® RfN 4161, original **RINGFEDER® Safety Covers** provide reliable and safe contact protection against screw heads of rotating shrink discs. They are made of high-quality black synthetic material, which features outstanding tear and abrasion resistance as well as excellent media stability.

### Characteristics

- Effective, secure contact protection from the screw heads of rotating shrink discs.
- Optimum availability in 13 sizes for shrink discs of the series RINGFEDER® RfN 4061 and RINGFEDER® RfN 4161 up to size 140 x 230 mm.
- Superior product quality thanks to perfect fit and use of high-grade synthetic material with ideal wear and durability properties.
- High degree of user-friendliness due to fast, simple assembly and disassembly.
- Attractive pricing and short delivery times.





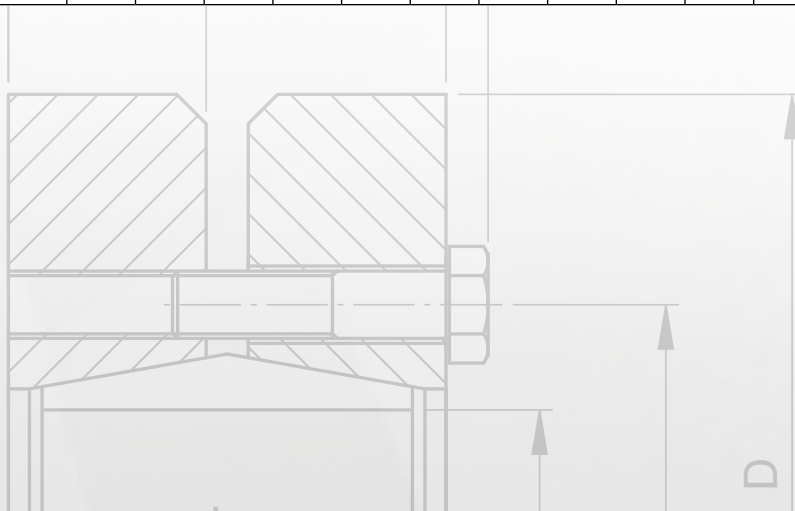


# ISO Tolerances

## 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

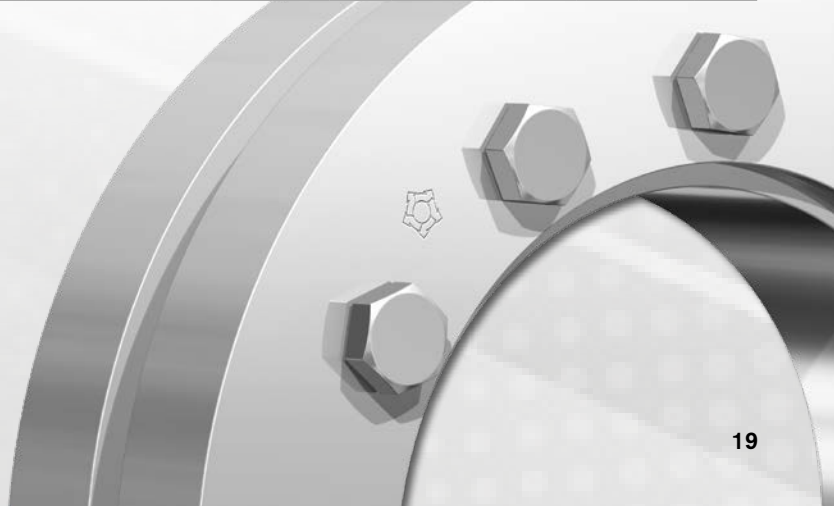
Nominal diameter of shaft mm		h6 µm		h5 µm		j6 µm		k6 µm		k5 µm		m6 µm		m5 µm		n6 µm		p6 µm	
above	to	upper	lower	upper	lower	upper	lower	upper	lower	upper	lower	upper	lower	upper	lower	upper	lower	upper	lower
3	6	0	-8	0	-5	+7	-1	-	-	-	-	+12	+4	+9	+4	+16	+8	+20	+12
6	10	0	-9	0	-6	+7	-2	+10	+1	+7	+1	+15	+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

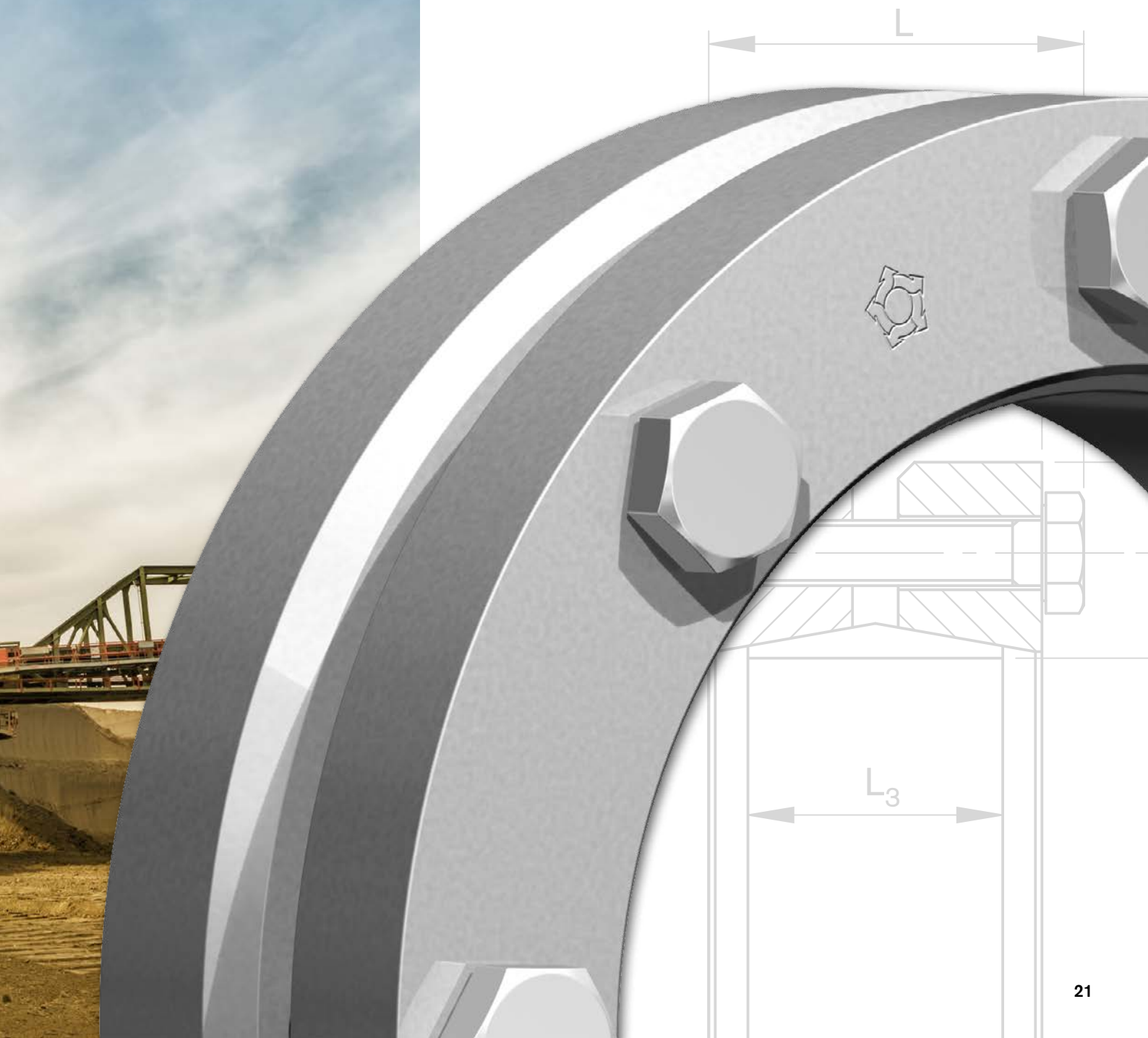
Nominal diameter of bore		H6		J7		J6		K7		K6		M7		M6		N7		N6		P7	
mm		µm		µm		µm		µm		µm		µm		µm		µm		µm		µm	
above	to	upper	lower	upper	lower	upper	lower	upper	lower	upper	lower	upper	lower	upper	lower	upper	lower	upper	lower	upper	lower
3	6	+ 8	0	+ 5	- 7	+ 4	- 4	-	-	-	-	0	- 12	- 1	- 9	- 4	- 16	- 5	- 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®**

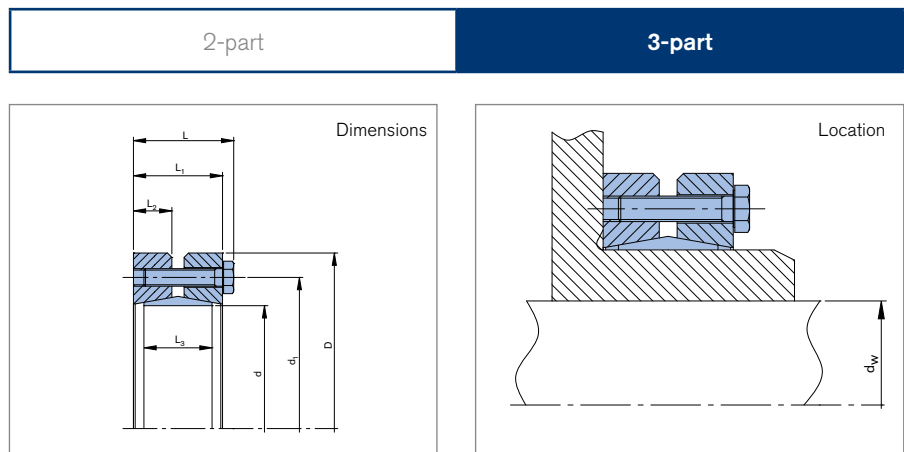
## Tables & Values



# 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 <sub>w</sub>	d <sub>1</sub>	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>B</sub>	T <sub>A</sub>	T	F <sub>ax</sub>	P	σ <sub>v</sub>	n <sub>Sc</sub>	Thread	Gw	T <sub>max</sub>
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	Nm	Nm	kN	N/mm <sup>2</sup>	N/mm <sup>2</sup>		mm	kg	Nm
125	x	185	95	158	58	51	22	39	30,5	59	10550	220	191	278	8	M10	5,1	13200
			100								12100	240		280				15125
			105								13800	260		288				17250
140	x	220	110	175	58	51	22	39	30,85	59	14800	265	192	268	9	M10	8	18500
			120								18640	310		281				23300
			125								20500	325		315				25625
155	x	245	130	192	58	51	22	39	30,5	59	24000	365	212	293	11	M10	10	30000
			135								26400	390		306				33000
			140								29000	410		334				36250
165	x	260	135	210	70	62	26	46	36	100	32000	475	224	298	10	M12	14	40000
			140								35200	500		308				44000
			145								38500	530		327				48125
175	x	275	145	220	70	62	26	46	36	100	39000	535	232	302	11	M12	14,7	48750
			150								42400	560		313				53000
			155								46000	590		334				57500
185	x	295	155	225	70	62	26	46	36	100	46600	600	240	307	12	M12	17,2	58250
			160								50300	625		319				62875
			165								54000	650		341				67500
195	x	315	165	237	80	72	31	56	41	100	63000	760	233	306	15	M12	23,8	78750
			170								67700	795		323				84625
			175								72500	825		355				90625
200	x	330	175	242	80	72	31	56	41	100	74000	850	243	334	16	M12	26,8	92500
			180								79500	890		368				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 <sub>w</sub>	d <sub>1</sub>	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>B</sub>	T <sub>A</sub>	T	F <sub>ax</sub>	P	σ <sub>v</sub>	n <sub>sc</sub>	Thread	G <sub>w</sub>	T <sub>max</sub>
mm			mm	mm	mm	mm	mm	mm	mm	Nm	Nm	kN	N/mm <sup>2</sup>	N/mm <sup>2</sup>		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 <sub>w</sub>	d <sub>1</sub>	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>B</sub>	T <sub>A</sub>	T	F <sub>ax</sub>	P	σ <sub>v</sub>	n <sub>Sc</sub>	Thread	Gw	T <sub>max</sub>
mm		mm	mm	mm	mm	mm	mm	mm	mm	Nm	Nm	kN	N/mm <sup>2</sup>	N/mm <sup>2</sup>		mm	kg	Nm
480	x	715	410	547	171	158	71	132	91,5	490	891000	4350	222	275	28	M20	255	1113750
			420								941000	4480		290				1176250
			425								966000	4548		301				1207500
500	x	750	425	567	171	158	71	132	91,5	490	986000	4645	228	275	30	M20	285	1232500
			430								1013000	4712		281				1266250
			440								1066000	4845		297				1332500

More sizes on request

### Explanation

<b>d</b> = Inner diameter	<b>L<sub>2</sub></b> = Thrust ring width	<b>P</b> = Hub surface pressure
<b>D</b> = Outer diameter	<b>L<sub>3</sub></b> = Width of ring	<b>σ<sub>v</sub></b> = Equivalent stress in the hub
<b>d<sub>w</sub></b> = Solid shaft diameter	<b>L<sub>B</sub></b> = Width of the half Shrink Disc	<b>n<sub>Sc</sub></b> = Quantity of screws
<b>d<sub>1</sub></b> = Pitch circle diameter	<b>T<sub>A</sub></b> = Tightening torque of the clamping screws	<b>D<sub>G</sub></b> = Thread
<b>L</b> = Overall length	<b>T</b> = Transmissible torque at given T <sub>A</sub>	<b>Gw</b> = Weight
<b>L<sub>1</sub></b> = Overall length (without screws)	<b>F<sub>ax</sub></b> = Transmissible axial force	<b>T<sub>max</sub></b> = Max. transmissible torque

### Ordering example

Series	d	D
RfN 4051	420	630

### Table Clearance

d <sub>w</sub>		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	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<sub>a</sub> ≤ 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<sub>2</sub> (μ<sub>tot</sub> = 0,1). The tapered cones are lubricated using MoS<sub>2</sub> (μ = 0,05). The contact surfaces (d<sub>w</sub>) 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<sup>2</sup>. (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](http://www.ringfeder.com)

### Disclaimer of liability

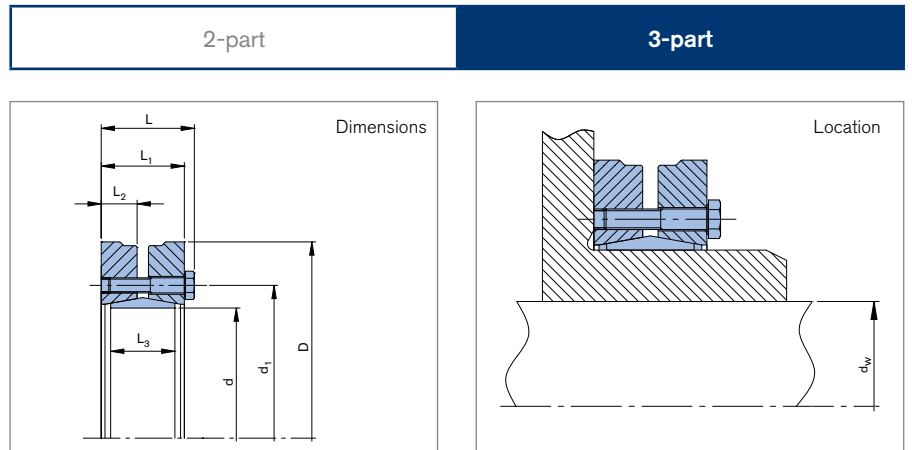
All technical details and notes are non-binding and cannot be used as a basis for legal claims. The user is obligated to determine whether the represented products meet his requirements. We reserve the right carry out modifications at any time in the interests of technical progress.



# Shrink Discs

## RINGFEDER® RfN 4061

Standard series for high torque



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

<sup>3)</sup> Different quality of screws. ISO 4014/4017 - 8.8

To continue see next page

### Shrink Discs RINGFEDER® RfN 4061

Shrink Discs dimensions										T <sub>A</sub>	Transmissible torques or axial forces				Locking screws				
d	x	D	d <sub>w</sub>	d <sub>1</sub>	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>B</sub>		T	F <sub>ax</sub>	P	σ <sub>œÉv</sub>	n <sub>Sc</sub>	D <sub>G</sub>	G <sub>w</sub>	T <sub>max</sub>	
mm			mm	mm	mm	mm	mm	mm	mm	Nm	Nm	kN	N/mm <sup>2</sup>	N/mm <sup>2</sup>	mm	kg	Nm		
38	x	72	29	55	30	26	10,5	21	15,2	12	700	62	295	378	6	M6	0,5	890	
			30								770			394				970	
			31								780			474				980	
40	x	72	30	57	28,5	24,5	10,5	19	14,8	12	720	61	310	375	6	M6	0,5	900	
			31								730			450				910	
			32								790			460				990	
44	x	80	32	63	30	26	11	20	15,3	12	800	73	312	429	7	M6	0,5	1000	
			35								1000			444				1250	
			36								1050			458				1350	
48	x	80	36	68	30	26	11	22	15,8	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	31,5	27,5	12	22,5	16,3	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	34,5	30,5	13	23	17,8	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	34,5	30,5	13	23	17,8	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	34,5	30,5	13	23,5	17,8	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	37,8	32,5	14	25	19,7	30	2650	121	277	377	7	M8	2,3	3300	
			60								3300			139				382	4150
			65								4050			158				416	5100
80	x	145	60	100	37,8	32,5	14	25	19,7	30	3200	126	259	353	7	M8	2,5	4000	
			65								3900			143				358	4900
			70								4600			160				392	5750
85	x	155	60	114	45,8	40,5	16	30	23	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	44,5	39	17	30	23	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	52,5	47,2	19	34	23,5	30	5350	195	275	349	12	M8	4,7	6700	
			70								6750			217				349	8450
			75								8150			240				355	10200
100	x	170	70	127	52,5	47,2	19	34	25,5	30	6950	202	261	331	12	M8	4,5	8700	
			75								7600			223				331	9500
			80								9100			245				338	11350
110	x	185	75	145	59,4	53	23	42	28,5	59	8150	259	254	316	10	M10	6,3	10150	
			80								10100			285				316	12600
			85								12200			296				357	15250
115	x	185	80	145	62,4	56	23	42	32	59	9500	267	243	302	10	M10	6,1	11850	
			90								12100			302				342	15100
			95								14050							17550	

To continue see next page

**Shrink Discs RINGFEDER® RfN 4061**

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

More sizes on request  
To continue see next page

## Shrink Discs RINGFEDER® RfN 4061

### Explanation

<b>d</b> = Inner diameter	<b>L<sub>2</sub></b> = Thrust ring width	<b>P</b> = Hub surface pressure
<b>D</b> = Outer diameter	<b>L<sub>3</sub></b> = Width of ring	<b>σ<sub>v</sub></b> = Equivalent stress in the hub
<b>d<sub>w</sub></b> = Solid shaft diameter	<b>L<sub>B</sub></b> = Width of the half Shrink Disc	<b>n<sub>Sc</sub></b> = Quantity of screws
<b>d<sub>1</sub></b> = Pitch circle diameter	<b>T<sub>A</sub></b> = Tightening torque of the clamping screws	<b>D<sub>G</sub></b> = Thread
<b>L</b> = Overall length	<b>T</b> = Transmissible torque at given T <sub>A</sub>	<b>G<sub>w</sub></b> = Weight
<b>L<sub>1</sub></b> = Overall length (without screws)	<b>F<sub>ax</sub></b> = Transmissible axial force	<b>T<sub>max</sub></b> = Max. transmissible torque

### Ordering example

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

N = Nickel plated series

### Table Clearance

d <sub>w</sub>		ISO	Max. clearance S mm
above	up to		
6	10	H6/j6	0,011
10	18		0,014
18	30		0,017
30	50		0,032
50	80		0,048
80	120		0,069
120	180	H7/g6	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<sub>a</sub> ≤ 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<sub>2</sub> (μ<sub>tot</sub> = 0,1). The tapered cones are lubricated using MoS<sub>2</sub> (μ = 0,05). The contact surfaces (d<sub>w</sub>) 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<sup>2</sup>. (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

### Safety Covers

As an effective, safe contact protection against screw heads of rotating shrink discs, original RINGFEDER® Safety Covers made of high-quality synthetic material are available for series RINGFEDER® RfN 4061 up to size 140 x 230 mm.

Further information on  
[RINGFEDER® RfN 4061](http://www.ringfeder.com) on  
[www.ringfeder.com](http://www.ringfeder.com)

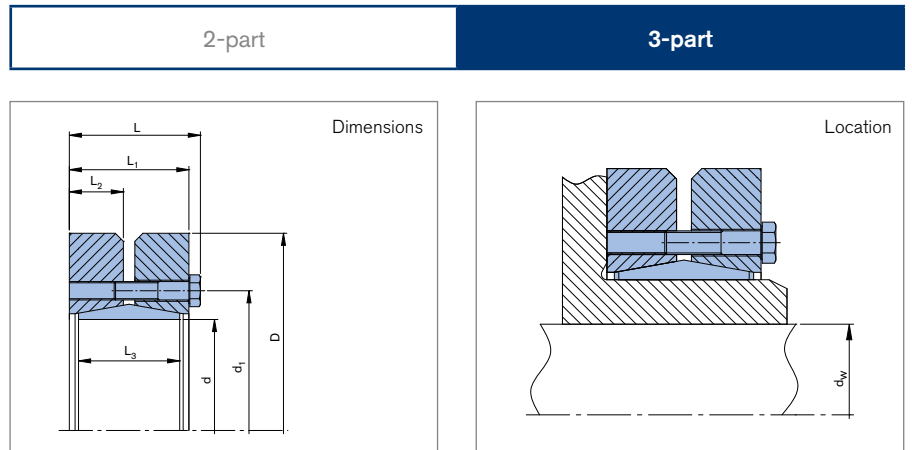
#### Disclaimer of liability

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 4071

Standard series for high torque



Shrink Discs dimensions											Transmissible torques or axial forces				Locking screws			
d	x	D	d <sub>w</sub>	d <sub>1</sub>	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>B</sub>	T <sub>A</sub>	T	F <sub>ax</sub>	P	σ <sub>v</sub>	ISO 4014/4017 - 10.9			T <sub>max</sub>
mm		mm	mm	mm	mm	mm	mm	mm	mm	Nm	Nm	kN	N/mm <sup>2</sup>	N/mm <sup>2</sup>	n <sub>sc</sub>	D <sub>G</sub>	G <sub>w</sub>	Nm
															Stück	mm	kg	
220	x	370	160	270	114	104	47	88	59,5	250	95000	1190	248	295	15	M16	54	118750
			165								102000	1239		298				127500
			170								110000	1290		303				137500
240	x	405	170	295	122	109	49	92	62	490	120000	1464	272	309	12	M20	67	150000
			180								138000	1576		315				172500
			190								156000	1675		334				195000
260	x	430	190	321	133	120	54	103	67,5	490	164000	1760	262	306	14	M20	82	205000
			200								184000	1880		314				230000
			210								205000	2010		329				256250
280	x	460	210	346	147	134	60	114	76,5	490	217000	2090	251	295	16	M20	102	271250
			220								244000	2220		306				305000
			230								270000	2350		324				337500
300	x	485	230	364	155	142	64	122	79,5	490	275000	2431	246	291	18	M20	118	343750
			240								295000	2567		303				368750
			245								315000	2636		312				393750
320	x	520	240	386	155	142	64	122	79,5	490	312000	2647	257	293	20	M20	131	390000
			250								340000	2786		301				425000
			260								374000	2900		320				467500
340	x	570	250	408	169	156	71	134	86,5	490	390000	3119	264	295	24	M20	186	487500
			260								422500	3249		307				528125
			270								460000	3400		317				575000
350	x	580	270	432	175	162	73	140	89,5	490	442000	3276	245	289	24	M20	195	552500
			280								480000	3430		300				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			
d	x	D	d <sub>w</sub>	d <sub>1</sub>	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>B</sub>	T <sub>A</sub>	T	F <sub>ax</sub>	P	σ <sub>v</sub>	ISO 4014/4017 - 10.9			T <sub>max</sub>
mm			mm	mm	mm	mm	mm	mm	mm	Nm	Nm	kN	N/mm <sup>2</sup>	N/mm <sup>2</sup>	n <sub>Sc</sub>	D <sub>G</sub>	G <sub>w</sub>	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

<b>d</b> = Inner diameter	<b>L<sub>2</sub></b> = Thrust ring width	<b>P</b> = Hub surface pressure
<b>D</b> = Outer diameter	<b>L<sub>3</sub></b> = Width of ring	<b>σ<sub>v</sub></b> = Equivalent stress in the hub
<b>d<sub>w</sub></b> = Solid shaft diameter	<b>L<sub>B</sub></b> = Width of the half Shrink Disc	<b>n<sub>sc</sub></b> = Quantity of screws
<b>d<sub>1</sub></b> = Pitch circle diameter	<b>T<sub>A</sub></b> = Max tightened torque of the clamping screws	<b>D<sub>G</sub></b> = Thread
<b>L</b> = Overall length	<b>T</b> = Transmissible torque at given T <sub>A</sub>	<b>G<sub>w</sub></b> = Weight
<b>L<sub>1</sub></b> = Overall length (without screws)	<b>F<sub>ax</sub></b> = Transmissible axial force	<b>T<sub>max</sub></b> = Max. transmissible torque

### Ordering example

Series	d	D
RfN 4071	420	520

### Table Clearance

d <sub>w</sub>		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	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<sub>a</sub> ≤ 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<sub>2</sub> (μ<sub>tot</sub> = 0,1). The tapered cones are lubricated using MoS<sub>2</sub> (μ = 0,05). The contact surfaces (d<sub>w</sub>) 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<sup>2</sup>. (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](http://www.ringfeder.com)

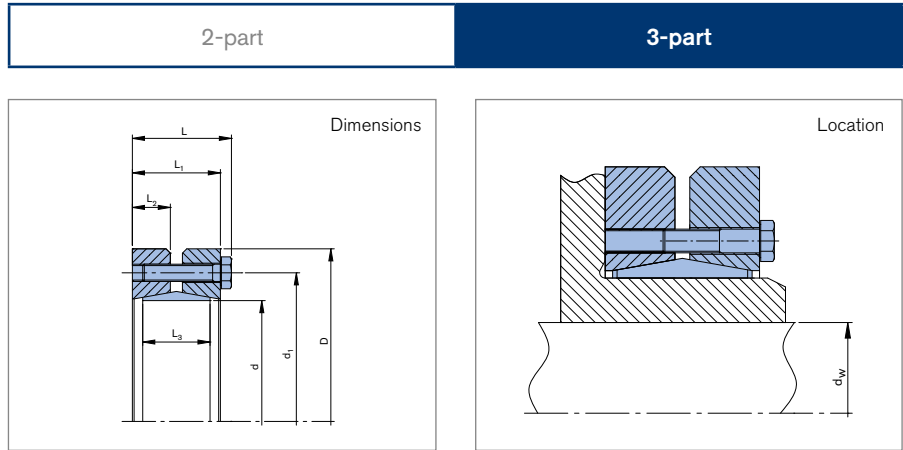
#### Disclaimer of liability

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 4073

Mini series for particularly light applications



Shrink Discs dimensions									Transmissible torques or axial forces				Locking screws				
d	x	D	d <sub>w</sub>	d <sub>1</sub>	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	T <sub>A</sub>	T	F <sub>ax</sub>	P	σ <sub>v</sub>	ISO 4014/4017 - 10.9		G <sub>w</sub>	T <sub>max</sub>
mm			mm	mm	mm	mm	mm	mm	Nm	Nm	kN	N/mm <sup>2</sup>	N/mm <sup>2</sup>	Stück	mm	kg	Nm
14	x	34	9	24	14	12	5,0	9	2,4	9	2,5	222	389	3	M4 <sup>1)</sup>	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 <sup>1)</sup>	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

<sup>1)</sup> 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 <sub>w</sub>	d <sub>1</sub>	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	T <sub>A</sub>	T	F <sub>ax</sub>	P	σ <sub>v</sub>	ISO 4014/4017 - 10.9			
mm			mm	mm	mm	mm	mm	mm	Nm	Nm	kN	N/mm <sup>2</sup>	N/mm <sup>2</sup>	n <sub>Sc</sub>	D <sub>G</sub>	G <sub>w</sub>	T <sub>max</sub>
														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							363
			35							320							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							589
			42							550							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							640
			45							550							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							790
			50							710							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							1010
			56							910							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							1190
			62							1060							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							1950
			65							1630							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							2020
			70							1770							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							2700
			75							2330							2920
85	x	128	76	105	32	28	11,5	22	12	2370	77,5	137	246	8	M6	1,41	2960
			78							2560							3200
			80							2760							3450
94	x	140	82	119	32	28	11,5	22	12	2300	69,5	124	253	8	M6	1,66	2870
			85							2600							3250
			88							2920							3660
105	x	150	92	128	32	28	11,5	22	12	3000	81,0	125	239	9	M6	1,77	3750
			95							3330							4160
			98							3680							4600
112	x	158	100	135	32	28	11,5	22	12	3390	84,5	117	225	9	M6	1,91	4240
			104							3850							3570
			106							4100							5120
120	x	164	106	141	36	32	13,0	25	12	3900	91,5	107	208	10	M6	2,2	4870
			110							4400							5500
			112							4670							5830
130	x	172	115	151	36	32	13,0	25	12	4250	99,0	99	191	10	M6	2,21	5320
			120							4890							6110
			122							5100							6380
140	x	182	125	161	36	32	13,0	25	12	5690	135,0	110	208	12	M6	2,4	7110
			128							6140							7670
			130							6450							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 <sub>w</sub>	d <sub>1</sub>	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	T <sub>A</sub>	T	F <sub>ax</sub>	P	σ <sub>v</sub>	n <sub>sc</sub>	D <sub>G</sub>	G <sub>w</sub>	T <sub>max</sub>
mm			mm	mm	mm	mm	mm	mm	Nm	Nm	kN	N/mm <sup>2</sup>	N/mm <sup>2</sup>	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

<b>d</b> = Inner diameter	<b>L<sub>2</sub></b> = Thrust ring width	<b>P</b> = Hub surface pressure
<b>D</b> = Outer diameter	<b>L<sub>3</sub></b> = Width of ring	<b>σ<sub>v</sub></b> = Equivalent stress in the hub
<b>d<sub>w</sub></b> = Solid shaft diameter	<b>L<sub>B</sub></b> = Width of the half Shrink Disc	<b>n<sub>sc</sub></b> = Quantity of screws
<b>d<sub>1</sub></b> = Pitch circle diameter	<b>T<sub>A</sub></b> = Max tightened torque of the clamping screws	<b>D<sub>G</sub></b> = Thread
<b>L</b> = Overall length	<b>T</b> = Transmissible torque at given T <sub>A</sub>	<b>G<sub>w</sub></b> = Weight
<b>L<sub>1</sub></b> = Overall length (without screws)	<b>F<sub>ax</sub></b> = Transmissible axial force	<b>T<sub>max</sub></b> = Max. transmissible torque

### Ordering example

Series	d	D
RfN 4073	46	80

### Table Clearance

d <sub>w</sub>		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	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<sub>a</sub> ≤ 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<sub>2</sub> (μ<sub>tot</sub> = 0,1). The tapered cones are lubricated using MoS<sub>2</sub> (μ = 0,05). The contact surfaces (d<sub>w</sub>) 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<sup>2</sup>. (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 4073** on  
[www.ringfeder.com](http://www.ringfeder.com)

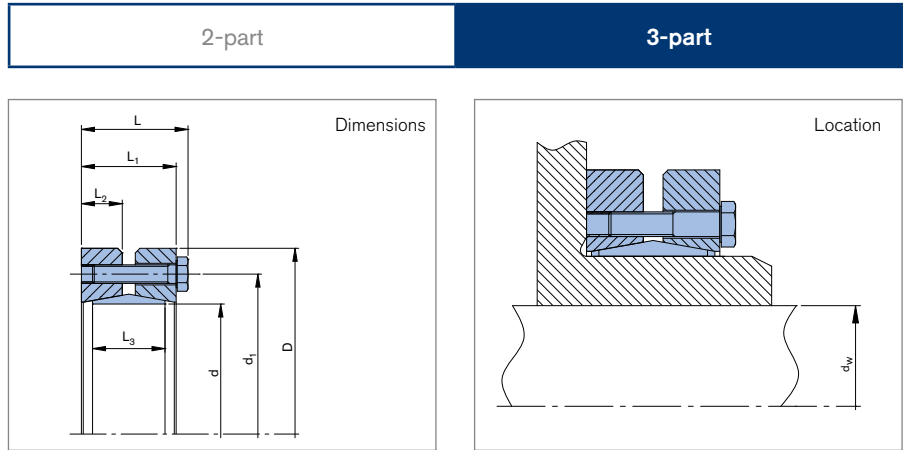
#### Disclaimer of liability

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 4091

### Heavy series for the highest torque



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

<b>d</b> = Inner diameter	<b>L<sub>2</sub></b> = Thrust ring width	<b>P</b> = Hub surface pressure
<b>D</b> = Outer diameter	<b>L<sub>3</sub></b> = Width of ring	<b>σ<sub>v</sub></b> = Equivalent stress in the hub
<b>d<sub>w</sub></b> = Solid shaft diameter	<b>L<sub>B</sub></b> = Width of the half Shrink Disc	<b>n<sub>sc</sub></b> = Quantity of screws
<b>d<sub>1</sub></b> = Pitch circle diameter	<b>T<sub>A</sub></b> = Max tightened torque of the clamping screws	<b>D<sub>G</sub></b> = Thread
<b>L</b> = Overall length	<b>T</b> = Transmissible torque at given T <sub>A</sub>	<b>G<sub>w</sub></b> = Weight
<b>L<sub>1</sub></b> = Overall length (without screws)	<b>F<sub>ax</sub></b> = Transmissible axial force	<b>T<sub>max</sub></b> = Max. transmissible torque

### Ordering example

Series	d	D
RfN 4091	100	170

### Table Clearance

d <sub>w</sub>		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	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<sub>a</sub> ≤ 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<sub>2</sub> (μ<sub>tot</sub> = 0,1). The tapered cones are lubricated using MoS<sub>2</sub> (μ = 0,05). The contact surfaces (d<sub>w</sub>) 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<sup>2</sup>. (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](http://www.ringfeder.com)

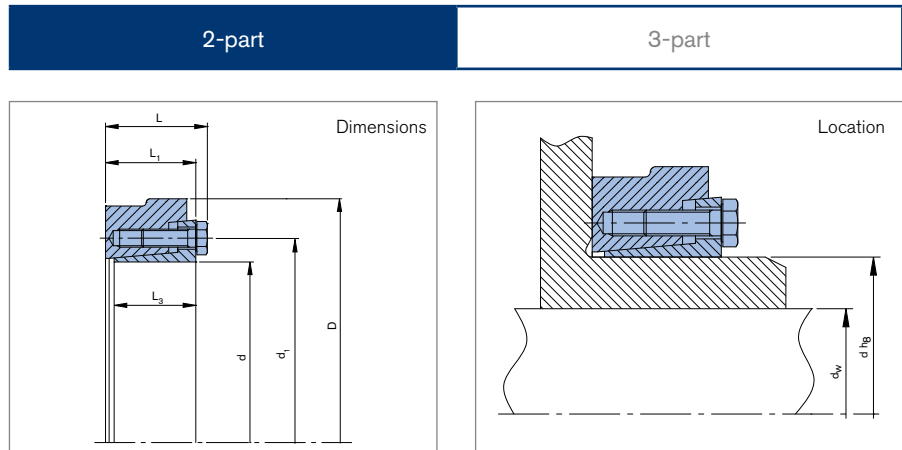
#### Disclaimer of liability

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 ISO 4014/4017 - 12.9			
d	x	D	d <sub>w</sub>	d <sub>1</sub>	L	L <sub>1</sub>	L <sub>3</sub>	T <sub>A</sub>	T	F <sub>ax</sub>	D <sub>G</sub>	G <sub>w</sub>	T <sub>max</sub>
mm		mm	mm	mm	mm	mm	mm	Nm	Nm	kN	mm	kg	Nm
18	x	44	15	30	19	15	13	12	80	11	M6	0,15	88
			16						110	14			121
20	x	47	17	32	19,3	15,3	13,5	12	150	18	M6	0,2	165
			18						180	20			198
24	x	50	19	36	22	18	15	12	160	17	M6	0,2	176
			20						210	20			231
26	x	51,5	22	38	22	18	16	12	280	25	M6	0,2	308
			20						230	23			253
30	x	60	24	44	24	20	17	12	300	27	M6	0,3	330
			22						310	29			341
36	x	72	24	52	27,3	22	18,5	35	270	23	M8	0,5	297
			25						320	25			352
38	x	72	26	54	27,3	22	18,5	35	360	28	M8	0,5	396
			27						510	37			561
40	x	80	30	61	29,3	24	20,5	35	710	47	M8	0,7	781
			33						950	58			1045
40	x	80	27	61	29,3	24	20,5	35	480	36	M8	0,7	528
			30						650	43			715
40	x	80	33	61	29,3	24	20,5	35	860	52	M8	0,7	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 <sub>w</sub>	d <sub>1</sub>	L	L <sub>1</sub>	L <sub>3</sub>	T <sub>A</sub>	T	F <sub>ax</sub>	D <sub>G</sub>	G <sub>w</sub>	T <sub>max</sub>
mm			mm	mm	mm	mm	mm	Nm	Nm	kN	mm	kg	Nm
44	x	80	35	61	29,3	24	20,5	35	800	52	M8	0,6	880
			36						890	57			979
			37						1050	60			1155
50	x	90	38	68	31,3	26	22	35	1500	79	M8	0,8	1650
			40						1700	87			1870
			42						2000	94			2200
55	x	100	42	72	34,3	29	25	35	1600	78	M8	1,1	1760
			45						2000	88			2200
			48						2400	99			2640
60	x	110	48	80	34,3	29	24,5	35	2200	92	M8	1,3	2420
			50						2500	98			2750
			52						2700	105			2970
62	x	110	48	80	34,3	29	24,5	35	2200	92	M8	1,3	2420
			50						2500	98			2750
			52						2700	105			2970
68	x	115	50	86	34,3	29	24,5	35	2400	94	M8	1,4	2640
			55						3000	111			3300
			60						3800	128			4180
75	x	138	55	100	37,5	31	26,3	70	3700	135	M10	2,3	4070
			60						4700	156			5170
			65						5800	177			6380
80	x	141	60	104	37,5	31	26	70	4200	141	M10	2,3	4620
			65						5200	160			5720
			70						6300	180			6930
85	x	155	65	114	45	38	34	70	5900	186	M10	3,7	6490
			70						7200	204			7920
			75						8500	227			9350
90	x	155	65	114	45	38	33	70	5900	182	M10	3,5	6490
			70						7200	204			7920
			75						8500	227			9350
95	x	170	70	124	49,5	43	37,5	70	7400	213	M10	4,9	8140
			75						8900	236			9790
			80						10400	260			11440
100	x	185	80	139	56,5	49	43	121	15000	370	M12	6,7	16500
			85						17300	400			19030
			90						19600	430			21560
105	x	185	80	139	56,5	49	43	121	13900	348	M12	6,4	15290
			85						16100	380			17710
			90						18600	434			20460
110	x	185	80	139	56,5	49	43	121	15500	380	M12	6,1	17050
			85						17800	410			19580
			90						20000	440			22000
115	x	200	85	150	62,5	55	48	121	17200	405	M12	8	18920
			90						19900	443			21890
			95						22900	482			25190
120	x	200	85	150	62,5	55	48	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								Transmissible torques or axial forces		Locking screws ISO 4014/4017 - 12.9		T <sub>max</sub> Nm	
d	x	D	d <sub>w</sub>	d <sub>1</sub>	L	L <sub>1</sub>	L <sub>3</sub>	T <sub>A</sub>	T	F <sub>ax</sub>	D <sub>G</sub>		G <sub>w</sub>
mm		mm	mm	mm	mm	mm	mm	Nm	Nm	kN	mm	kg	
125	x	215	90	157	60,5	53	46,5	121	19200	420	M12	9	21120
			95						21700	450			23870
			100						24400	480			26840
130	x	230	95	172	65,5	58	51	121	25900	540	M12	11,5	28490
			100						29000	580			31900
			110						36000	650			38600
135	x	230	95	172	67	58	51	190	21450	452	M14	11,1	23595
			100						24300	486			26730
			110						30500	555			33500
140	x	230	100	172	67	58	51	190	25300	500	M14	10,7	27830
			105						28000	530			30800
			115						35600	610			39160
150	x	263	110	190	71	62	55	190	37000	673	M14	16,3	40700
			120						45300	754			49830
			125						49700	795			54670
155	x	263	110	190	71	62	55	190	33000	600	M14	15,8	36300
			115						36600	637			40260
			120						40500	674			44550
160	x	290	120	200	78	68	61	290	57300	950	M16	22,3	63030
			130						66700	1020			73370
			135						72500	1070			79750
165	x	290	120	200	78	68	61	290	56500	940	M16	21,7	62150
			125						61500	980			67650
			135						72500	1070			79750
170	x	300	130	210	78,5	68,5	61	290	61000	938	M16	22,3	67100
			140						72300	1023			79530
			145						78400	1081			86240
175	x	300	130	210	78,5	68,5	61	290	61500	900	M16	21,7	67650
			135						67000	990			73700
			140						72500	1030			79750
180	x	320	140	224	97	87	77,5	290	86500	1237	M16	34	95150
			150						101400	1352			111540
			155						109300	1401			120230
185	x	320	140	224	97	87	77,5	290	96000	1250	M16	33,1	105600
			145						104000	1350			114400
			155						120000	1550			132000
190	x	320	150	238	96	86	76	290	92000	1250	M16	32	101200
			155						99000	1300			108900
			165						113500	1400			124850
195	x	340	150	238	95,5	85,5	77	290	103000	1374	M16	35	113300
			160						119300	1491			131230
			165						126100	1529			138710
200	x	340	150	238	95,5	85,5	77	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

<b>d</b> = Inner diameter	<b>L<sub>1</sub></b> = Overall length (without screws)	<b>n<sub>Sc</sub></b> = Quantity of screws
<b>D</b> = Outer diameter	<b>L<sub>3</sub></b> = Width of ring	<b>D<sub>G</sub></b> = Thread
<b>d<sub>w</sub></b> = Solid shaft diameter	<b>T<sub>A</sub></b> = Tightening torque of the clamping screws	<b>G<sub>w</sub></b> = Weight
<b>d<sub>1</sub></b> = Pitch circle diameter	<b>T</b> = Transmissible torque at given T <sub>A</sub>	<b>T<sub>max</sub></b> = Max. transmissible torque
<b>L</b> = Overall length	<b>F<sub>ax</sub></b> = Transmissible axial force	

### Ordering example

Series	d	D
RfN 4161	150	263

### Table Clearance

d <sub>w</sub>		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	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<sub>a</sub> ≤ 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 R<sub>p0,2</sub> ≥ 360 N/mm<sup>2</sup>
- Additional loads, e.g. tension, thrust or bending have to be taken into consideration accordingly
- Function values: The functional characteristics are valid with the screw tightening torque listed in the tables and the following assumed conditions: The locking screws are lubricated using MoS<sub>2</sub> (μ<sub>tot</sub> = 0,1). The tapered cones are lubricated using MoS<sub>2</sub> (μ = 0,05). The contact surfaces (d<sub>w</sub>) 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<sup>2</sup>. (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.

### Safety Covers

As an effective, safe contact protection against screw heads of rotating shrink discs, original RINGFEDER® Safety Covers made of high-quality synthetic material are available for series RINGFEDER® RfN 4161 up to size 140 x 230 mm.

Further information on  
**RINGFEDER® RfN 4161** on  
[www.ringfeder.com](http://www.ringfeder.com)

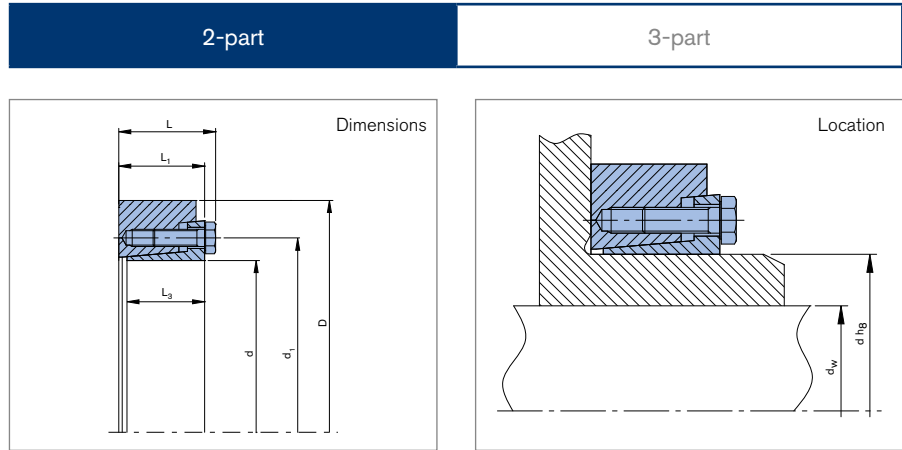
#### Disclaimer of liability

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 <sub>w</sub>	d <sub>1</sub>	L	L <sub>1</sub>	L <sub>3</sub>	T <sub>A</sub>	T	F <sub>ax</sub>	ISO 4014/4017 - 12.9	G <sub>w</sub>	T <sub>max</sub>
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						268000	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 <sub>A</sub>	Transmissible torques or axial forces		Locking screws		T <sub>max</sub>	
d	x	D	d <sub>w</sub>	d <sub>1</sub>	L	L <sub>1</sub>		L <sub>3</sub>	T	F <sub>ax</sub>	ISO 4014/4017 - 12.9		G <sub>w</sub>
mm			mm	mm	mm	mm	mm	Nm	Nm	kN	mm	kg	Nm
380	x	640	290	444	185,1	168,1	148	1450	735000	5069	M27	247,5	808500
			300						790000	5266			869000
			310						845000	5452			929500
390	x	650	290	470	186,3	167,6	144	1900	903000	6250	M30	259,55	993300
			300						970000	6450			1067000
			320						1101000	6950			1221000
420	x	670	320	495	203,9	186,9	166	1450	969000	6056	M27	284,75	1065900
			330						1038000	6291			1141800
			350						1183000	6762			1301300
440	x	740	340	518	212,9	195,9	178	1450	1212000	7129	M27	398	1333200
			350						1292000	7383			1421200
			370						1460000	7892			1606000
480	x	790	380	552	243,7	225,0	201	1900	1815000	9552	M30	495,4	1996500
			390						1920000	9845			2112000
			410						2118000	10331			2329800
500	x	835	400	572	238,7	220,0	198	1900	2054000	10270	M30	626,3	2259400
			410						2145000	10463			2359500
			430						2377000	11055			2614700
530	x	850	430	608	260,0	240,0	206	1900	2397000	11150	M30	653,4	2636700
			440						2520520	11457			2772572
			460						2777417	12076			3055159
560	x	940	450	632	260,0	240,0	206	1900	2545000	11311	M30	748,7	2799500
			460						2670006	11609			2937006
			480						2929521	12206			3222473
590	x	960	470	654	380,0	361,0	286	1900	4012000	17072	M30	1173,9	4413200
			480						4199188	17497			4619106
			500						4587043	18348			5045747
620	x	970	500	720	304,0	285,0	244	1900	3402000	13608	M30	886,7	3742200
			520						3708000	14261			4078800
			540						4028000	14918			4430800
660	x	1040	530	728	418,0	396,0	310	3500	5758000	21750	M36	1448,2	6333800
			550						6236900	22680			6860590
			570						6735919	23635			7409510
700	x	1140	560	815	315,0	294,0	260	2700	4518700	16138	M33	1467,5	4970570
			580						4880000	16828			5368000
			600						5258000	17527			5783800
750	x	1150	600	900	340,0	428,0	360	3500	7669000	25563	M36	1847,5	8435900
			620						8228643	26544			9051507
			650						9106895	28021			10017584
800	x	1230	640	935	373,0	352,0	296	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

<b>d</b> = Inner diameter	<b>L<sub>1</sub></b> = Overall length (without screws)	<b>n<sub>sc</sub></b> = Quantity of screws
<b>D</b> = Outer diameter	<b>L<sub>3</sub></b> = Width of ring	<b>D<sub>G</sub></b> = Thread
<b>d<sub>w</sub></b> = Solid shaft diameter	<b>T<sub>A</sub></b> = Max tightened torque of the clamping screws	<b>G<sub>w</sub></b> = Weight
<b>d<sub>1</sub></b> = Pitch circle diameter	<b>T</b> = Transmissible torque at given T <sub>A</sub>	<b>T<sub>max</sub></b> = Max. transmissible torque
<b>L</b> = Overall length	<b>F<sub>ax</sub></b> = Transmissible axial force	

### Ordering example

Series	d	D
RfN 4181	260	430

### Table Clearance

d <sub>w</sub>		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	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<sub>a</sub> ≤ 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/mm<sup>2</sup>
- Additional loads, e.g. tension, thrust or bending have to be taken into consideration accordingly
- Function values: The functional characteristics are valid with the screw tightening torque listed in the tables and the following assumed conditions: The locking screws are lubricated using MoS<sub>2</sub> (μ<sub>lot</sub>= 0,1). The tapered cones are lubricated using MoS<sub>2</sub> (μ = 0,05). The contact surfaces (d<sub>w</sub>) 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<sup>2</sup>. (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](http://www.ringfeder.com)

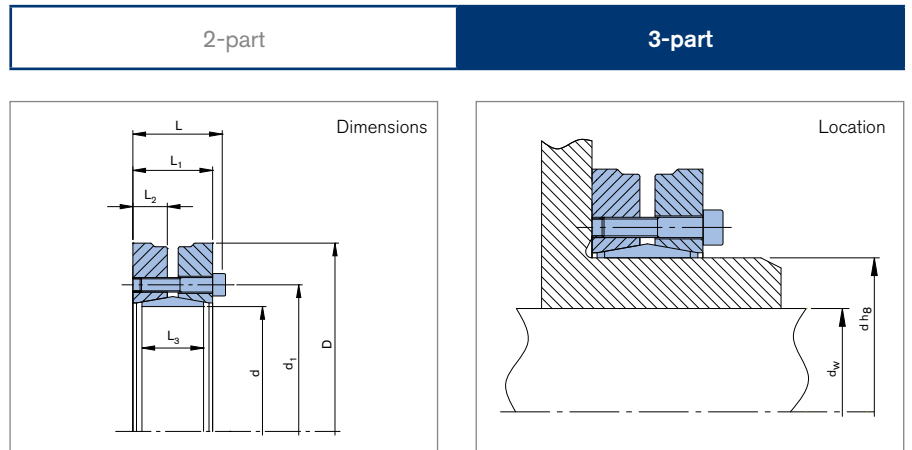
#### Disclaimer of liability

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# 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 ISO 4762				
d	x	D	d <sub>w</sub>	d <sub>1</sub>	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	T <sub>A</sub>	T	F <sub>ax</sub>	P	σ <sub>v</sub>	n <sub>Sc</sub>	D <sub>G</sub>	G <sub>w</sub>	T <sub>max</sub>
mm		mm	mm	mm	mm	mm	mm	mm	Nm	Nm	kN	N/mm <sup>2</sup>	N/mm <sup>2</sup>		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									Transmissible torques or axial forces				High-strength special screws ISO 4762				
d	x	D	d <sub>w</sub>	d <sub>1</sub>	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	T <sub>A</sub>	T	F <sub>ax</sub>	P	σ <sub>v</sub>	n <sub>Sc</sub>	D <sub>G</sub>	G <sub>w</sub>	T <sub>max</sub>
mm			mm	mm	mm	mm	mm	mm	Nm	Nm	kN	N/mm <sup>2</sup>	N/mm <sup>2</sup>		mm	kg	Nm
38	x	72	29	55	32	26	10	21	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	19	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	20	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	22	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	22,5	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	23	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	23	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	23,5	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	30	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	30	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	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	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	30	5350	195	275	349	12	M8	4,7	6700
			70							6750	217		349				8450
			8150							240	355		10200				
100	x	170	6950	127	55,1	47,1	19	34	30	6950	202	261	331	12	M8	4,5	8700
			7600							223	331		9500				
			9100							245	338		11350				
110	x	185	8150	145	63	53	21,5	42	59	8150	259	254	316	10	M10	6,3	10150
			10100							285	316		12600				
			12200							296	357		15250				
115	x	185	9500	145	66	56	21,5	42	59	9500	267	243	302	10	M10	6,1	11850
			12100							302	342		15100				
			14050							329	353		17550				

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### Shrink Discs RINGFEDER® RfN 4061 stainless steel

Shrink Discs dimensions									Transmissible torques or axial forces		P	σ <sub>v</sub>	High-strength special screws ISO 4762				
d	x	D	d <sub>w</sub>	d <sub>1</sub>	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	T <sub>A</sub>	T			F <sub>ax</sub>	n <sub>Sc</sub>	D <sub>G</sub>	G <sub>w</sub>	T <sub>max</sub>
mm			mm	mm	mm	mm	mm	mm	Nm	Nm	kN	N/mm <sup>2</sup>	N/mm <sup>2</sup>	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		352				16350
			95							15150	355		352				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

<b>d</b> = Inner diameter	<b>L<sub>2</sub></b> = Thrust ring width	<b>P</b> = Hub surface pressure
<b>D</b> = Outer diameter	<b>L<sub>3</sub></b> = Width of ring	<b>σ<sub>v</sub></b> = Equivalent stress in the hub
<b>d<sub>w</sub></b> = Solid shaft diameter	<b>L<sub>B</sub></b> = Width of the half Shrink Disc	<b>n<sub>Sc</sub></b> = Quantity of screws
<b>d<sub>1</sub></b> = Pitch circle diameter	<b>T<sub>A</sub></b> = Tightening torque of the clamping screws	<b>D<sub>G</sub></b> = Thread
<b>L</b> = Overall length	<b>T</b> = Transmissible torque at given T <sub>A</sub>	<b>G<sub>w</sub></b> = Weight
<b>L<sub>1</sub></b> = Overall length (without screws)	<b>F<sub>ax</sub></b> = Transmissible axial force	<b>T<sub>max</sub></b> = Max. transmissible torque

### Ordering example

Series	d	D	Version
RfN 4061	96	170	SST

SST = Stainless steel

### Table Clearance

d <sub>w</sub>		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	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<sub>a</sub> ≤ 3,2 μm
- Tolerances: For shaft see table
- Due to its high chromium content, the material used has medium to high corrosion resistance to media with moderate aggressiveness, e.g., water, steam, humidity, soaps, solvents, organic acids, or alkalis. It is not suitable for media containing chlorine or for seawater. In case of uncertainty, please consult with RINGFEDER POWER TRANSMISSION.
- 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<sub>2</sub> (μ<sub>tot</sub> = 0,1). The tapered cones are lubricated using MoS<sub>2</sub> (μ = 0,05). The contact surfaces (d<sub>w</sub>) 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<sup>2</sup>. (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.

### Safety Covers

As an effective, safe contact protection against screw heads of rotating shrink discs, original RINGFEDER® Safety Covers made of high-quality synthetic material are available for series RINGFEDER® RfN 4061 up to size 140 x 230 mm.

Further information on RINGFEDER® RfN 4061 stainless steel on [www.ringfeder.com](http://www.ringfeder.com)

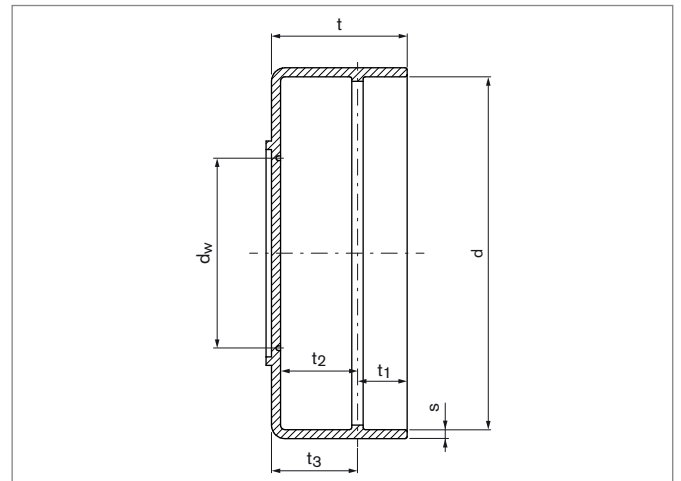
#### Disclaimer of liability

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® Safety Covers

Suited for Series RfN 4061 and RfN 4161



No.	Safety Covers							Shrink Discs	
	d	d <sub>w</sub>	s	t	t <sub>1</sub>	t <sub>2</sub>	t <sub>3</sub>	RfN 4061	RfN 4161
	mm	mm	mm	mm	mm	mm	mm	d x D	d x D
SC01	49	26	2,4	22,5	6,0	14,1	16,5	21 x 50	24 x 50
								24 x 50	26 x 51,5
								30 x 52	
SC02	59	26	2	23	7,0	15	17	30 x 60	30 x 60
SC03	70	33	2	27	5,5	19,5	21,5	36 x 72	36 x 72
								38 x 72	38 x 72
								40 x 72	
SC04	78	40	2	29	7,5	19,5	21,5	44 x 80	40 x 80
								48 x 80	44 x 80
SC05	88	42	2	30,5	8,3	20,25	22,25	50 x 90	50 x 90
SC06	107	60	3	33,5	8,8	21,75	24,75	62 x 110	60 x 110
								68 x 115	62 x 110
									68 x 115
SC07	135	70	3	36,8	9,0	24,8	27,8	75 x 138	75 x 138
								80 x 145	80 x 141
SC08	151	75	3	44,8	13,0	28,8	31,8	85 x 155	85 x 155
								90 x 155	90 x 155

To continue see next page

## Shrink Discs RINGFEDER® Safety Covers

No.	Safety Covers							Shrink Discs	
	d	d <sub>w</sub>	s	t	t <sub>1</sub>	t <sub>2</sub>	t <sub>3</sub>	RfN 4061 d x D	RfN 4161 d x D
	mm	mm	mm	mm	mm	mm	mm	mm	mm
SC09	180	95	3	58,4	18,5	36,9	39,9	110 x 185 115 x 185	100 x 185 105 x 185 110 x 185
SC10	166	80	3	51,5	15,6	32,9	35,9	95 x 170 100 x 170	95 x 170
SC11	195	95	3,5	61,5	16,0	42	45,5	---	115 x 200 120 x 200
SC12	210	100	3,5	59,4	16,0	39,9	43,4	125 x 215	125 x 215
SC13	225	115	3,5	67	19,3	44,25	47,75	140 x 230	130 x 230 135 x 230 140 x 230

## Explanations

**d** = Inner diameter  
**D** = Outer diameter  
**d<sub>w</sub>** = Solid shaft diameter

**s** = Material thickness  
**t** = Length of cover  
**t<sub>1</sub>** = Distance of cover back to bar

**t<sub>2</sub>** = Inner distance of lid to bar  
**t<sub>3</sub>** = Outer distance of lid to bar

## Ordering example

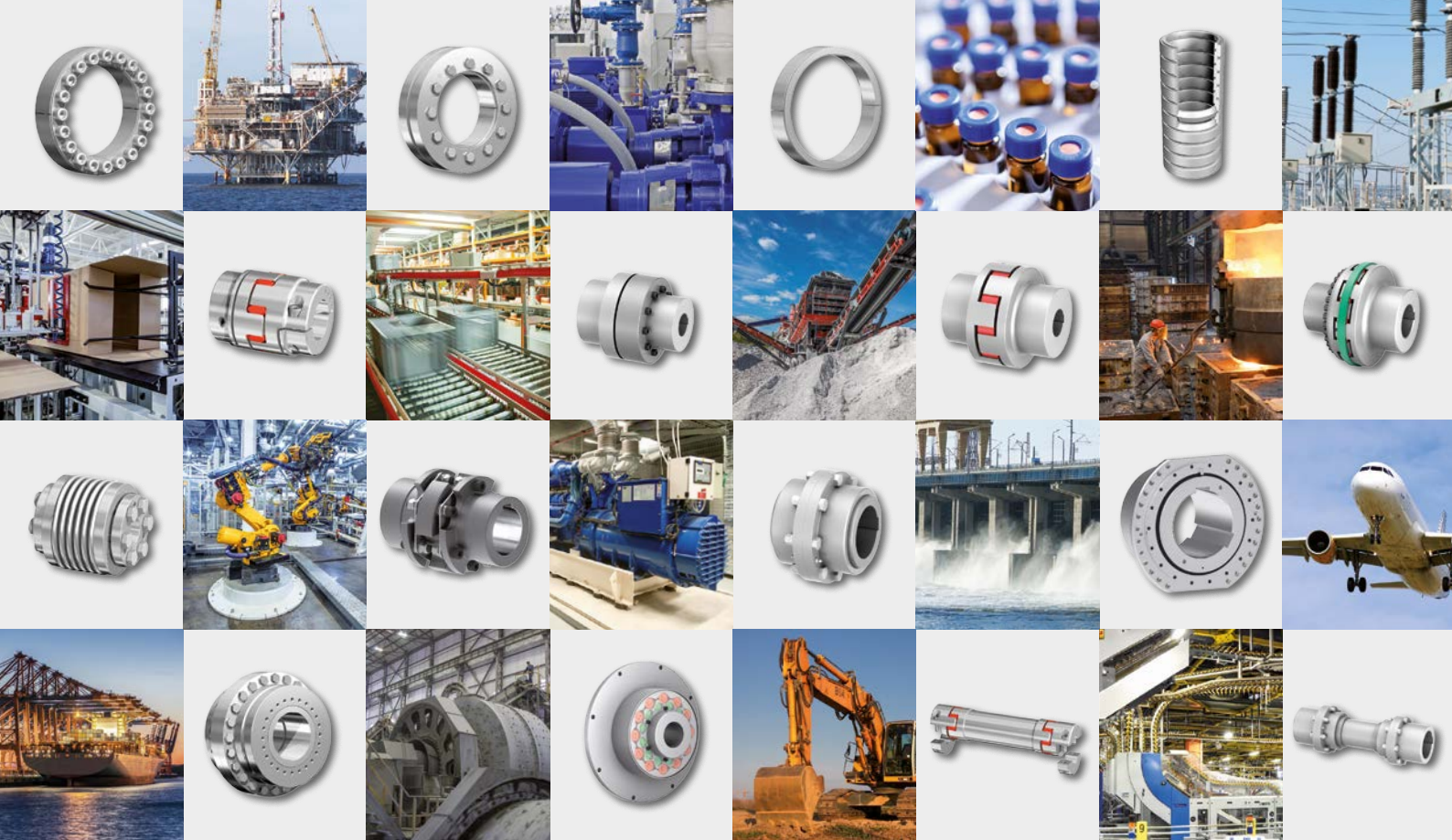
	No.
Shrink Discs Safety Covers	SC08

Further information on  
**RINGFEDER® Safety Covers**  
 on [www.ringfeder.com](http://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 to carry out modifications at any time in the interests of technical progress.





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