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Mars Rover:
Courtesy NASA/
JPL-Caltech



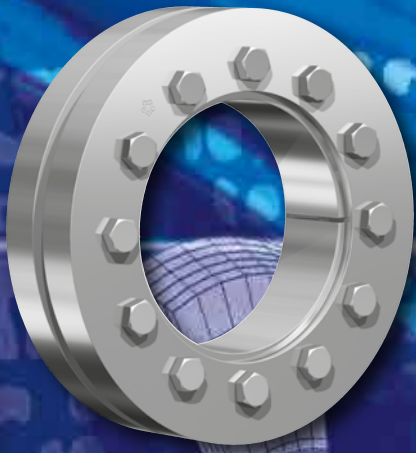
We offer locking devices, couplings, bearing housings and damping technology for OEMs but also for the final customer under our strong brand names RINGFEDER, TSCHAN, HENFEL and GERWAH. Our brand ECOLOC supplies reliable products off the shelf.

We 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





Content



Content

Smart-Lock

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Content

RINGFEDER® Shrink Discs





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. Being positioned around the hub there is only one interface transmitting the loads giving the shrink disc method distinct advantages such as offering the possibility of very concentric and well balanced connections that are suited to high speed applications. Traditional shrink fits require complicated calculations, close machining tolerances and fine surface finishes, they also need considerable effort with mounting and removal. The shrink disc connection has none of these disadvantages and is better than any of the other usual connection methods with regard to fatigue strength under alternating torsional stress.

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.

Clearances considered for the calculation of the function values:

d_w		ISO	max. Clearance S inch
above inch	up to inch		
0.236	0.394	H6/j6	0.0005
0.394	0.709		0.0006
0.709	1.181	H6/h6	0.0007
1.181	1.969	H6/g6	0.0013
1.969	3.150	H7/g6	0.0019
3.150	4.724		0.0027
4.724	7.087		0.0031
7.087	9.843		0.0035
9.843	12.402		0.0040
12.402	15.748		0.0044
15.748	19.685		0.0048
19.685	24.803		0.0054
24.803	31.496	0.0061	

Table is not valid for: RfN 4012, RfN 4022, RfN 4023

Surface finishes

For shaft diameter d_w : Peak-to-valley height $R_a \leq 125$ RMS.

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.

Explanations to tables

Basic dimensions when screws are not tightened

d	=	Inner diameter
D	=	Outer diameter
d _w	=	Solid shaft diameter
d ₁	=	Pitch circle diameter
L	=	Overall length
L ₁	=	Overall length without screws
L ₂	=	Thrust ring width
L ₃	=	Width of ring
L _B	=	Width of the half shrink disc
Z	=	Depth of center value
T _A	=	Max. tightened torque of the screws
T	=	Transmissible torque at given T _A
F _{ax}	=	Transmissible axial force
G _w	=	Weight
P	=	Hub surface pressure
σ _v	=	Equivalent stress in the hub
n _{Sc}	=	Quantity of screws
G	=	Center diameter
R	=	Radius
T _{max}	=	Max. transmissible torque
σ _v	=	Calculated combined stress in the hub extension (d/d _w) under consideration of the tangential, radial and torsional stresses following the equation:

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

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

Function values

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

The locking screws are lubricated using MoS₂ (μ_{tot} = 0,1).

The tapered cones are lubricated using MoS₂ (μ = 0,05).

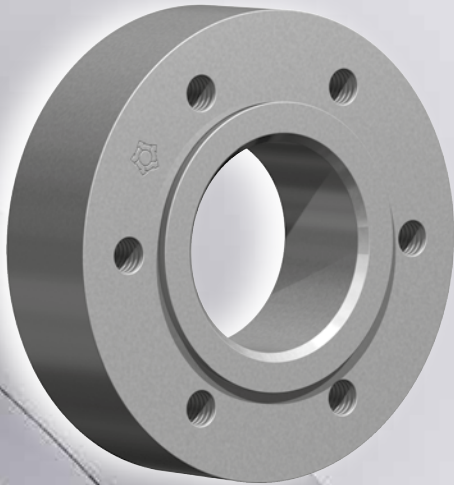
The contact surfaces (d_w) are in lightly oiled condition with coefficient of friction μ = 0,12.

The hub and shaft materials have a modulus of elasticity of 210,000 N/mm². (Lower values result in increased values for T and F_{ax} with reduced tangential stress.)

The maximum clearance S is being fully utilized.

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

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



Characteristics

Reduced dimensions – for lower transmissible torques, especially for applications with restricted space.

Compensation of small tolerance errors – please contact our engineers.

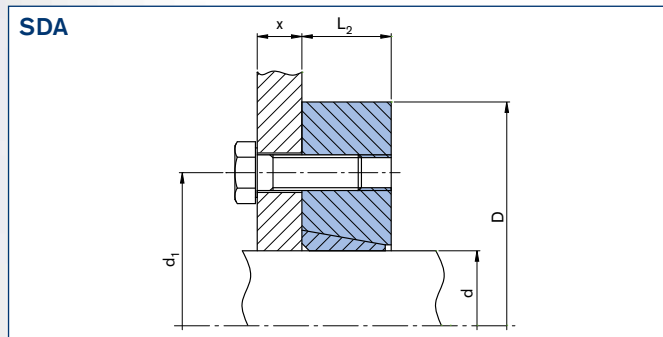
Maximum reliability – suitable for static, dynamic and impact loads.

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

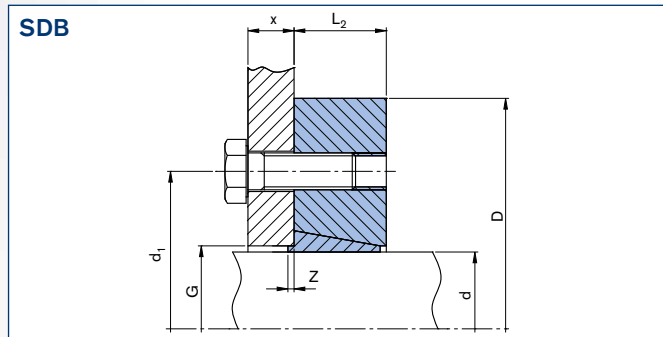
Easy mounting – no steps, keyways, splines are required, therefore hubs can be located and locked at any point or angle on the shaft. RINGFEDER® Shrink Discs use standard screws tightened with standard tools. No additional machining or fitting work is required.

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

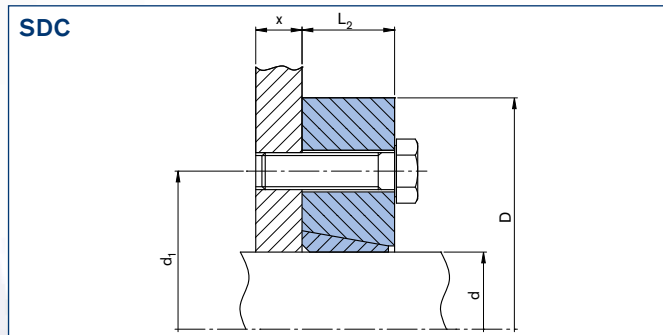
Description of configurations



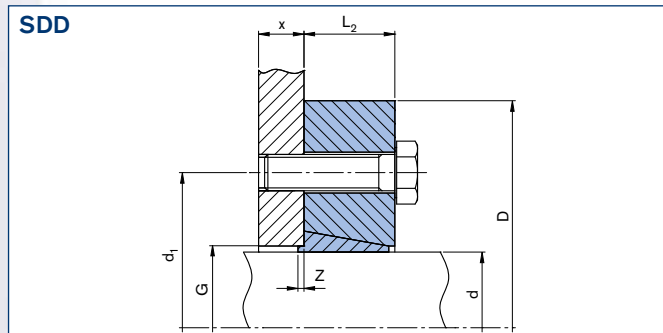
RfN 4012 configuration SDA thread in shrink disc without centering



RfN 4012 configuration SDB thread in shrink disc with centering



RfN 4012 configuration SDC through boring in shrink disc without centering



RfN 4012 configuration SDD through boring in shrink disc with centering

Type	Shrink Discs dimensions						T _A ¹⁾	Transmissible torques	Locking screws ¹⁾ ISO 4014 / 4017 - 10.9			
	d x D		d ₁	G ²⁾	L ₂	Z			T	Quantity	Thread	Gw
	mm	inch										
10 SD-x	9	0.354						15				
	10 x 39	0.394 x 1.535	0.984	0.472	0.394	0.059	9	15	3	M6	0.22	
	11	0.433						15				
12 SD-x	11	0.433						37				
	12 x 44	0.472 x 1.732	1.102	0.551	0.512	0.059	9	37	3	M6	0.22	
	13	0.512						37				
15 SD-x	14	0.551						96				
	15 x 52	0.591 x 2.047	1.417	0.709	0.591	0.079	22	96	3	M8	0.44	
	16	0.630						96				
20 SD-x	16	0.630						148				
	18 x 60	0.709 x 2.362	1.654	0.866	0.669	0.079	22	148	3	M8	0.66	
	20	0.787						148				
25 SD-x	20	0.787						251				
	22 x 66	0.866 x 2.598	1.890	1.063	0.748	0.079	22	251	5	M8	0.88	
	25	0.984						251				
30 SD-x	25	0.984						406				
	28 x 76	1.102 x 2.992	2.205	1.260	0.827	0.079	22	406	6	M8	1.32	
	30	1.181						406				
40 SD-x	30	1.181						782				
	35 x 96	1.378 x 3.780	2.756	1.693	0.984	0.118	45	782	6	M10	2.65	
	40	1.575						782				
50 SD-x	40	1.575						738				
	45 x 112	1.772 x 4.409	3.307	2.087	1.181	0.118	75	1,328	7	M12	3.97	
	50	1.969						1,623				

x = Configuration SDA = Thread in shrink disc without centering SDB = Thread in shrink disc with centering
SDC = Through boring in shrink disc without centering SDD = Through boring in shrink disc with centering

¹⁾ Shrink disc delivered without screws. Tightening torques for screws quantity see table
²⁾ The bore tolerance of the customer component should be within the fit tolerance G6 and H7

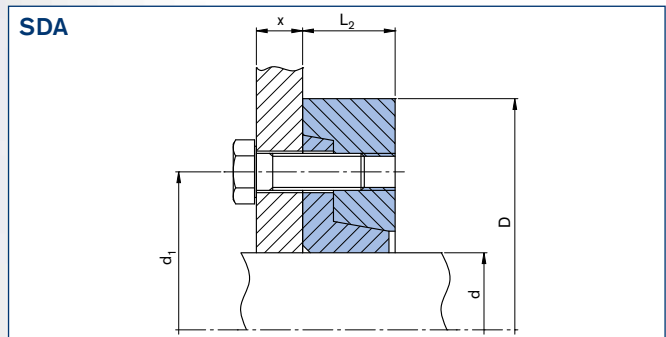
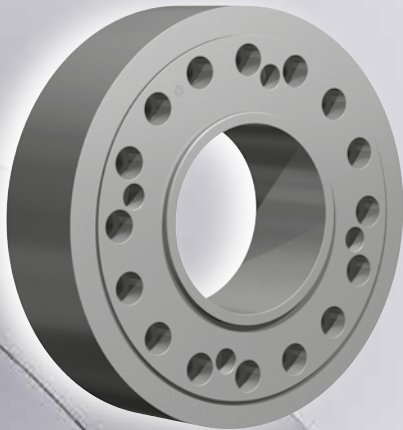
Ordering examples: RfN 4012

Series	Type	d
RfN 4012	40 SDA	1.378
RfN 4012	40 SDB	1.378
RfN 4012	40 SDC	1.378
RfN 4012	40 SDD	1.378

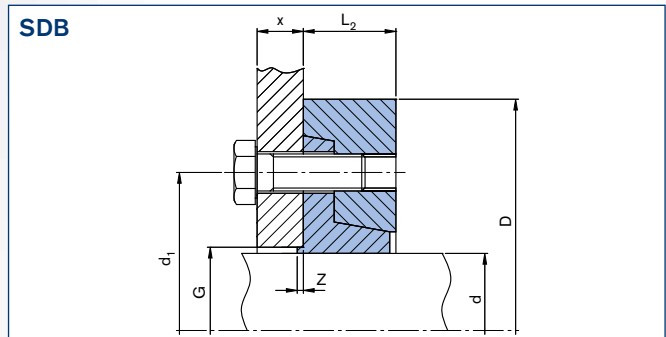
- Surface finishes
For shaft R_a ≤ 3,2 μm
- Tolerances
For shaft h9
- When using a hollow shaft instead of a solid shaft
please contact our Engineering-Team

Explanations to tables: Page 9

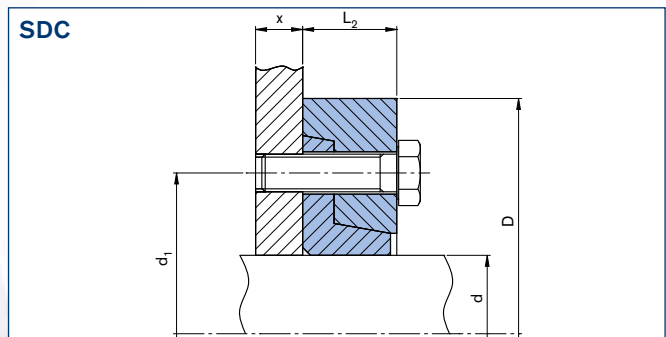
Description of configurations



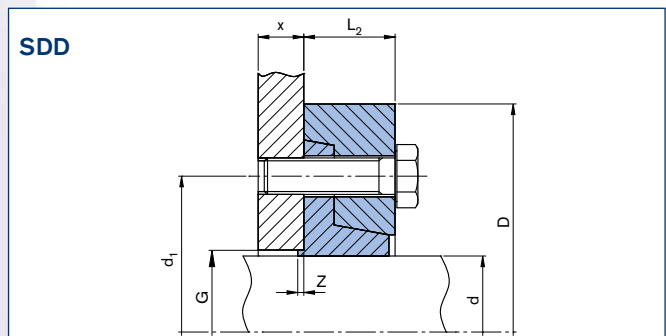
RfN 4022 configuration SDA thread in shrink disc without centering



RfN 4022 configuration SDB thread in shrink disc with centering



RfN 4022 configuration SDC through boring in shrink disc without centering



RfN 4022 configuration SDD through boring in shrink disc with centering

Type	Shrink Discs dimensions							T _A ¹⁾ ft-lbs	Transmissible torques T ft-lbs	Locking screws ¹⁾ ISO 4014 / 4017 - 10.9		
	d x D		d ₁	G ²⁾	L ₂	Z	Quantity			Thread	Gw	
	mm	inch	inch	inch	inch	inch					lbs	
12 SD-x	11	0.433	x 1.378	0.945	0.551	0.433	0.059	9	37	3	M6	0.22
	12	0.472										
	--	--										
14 SD-x	13	0.512	x 1.496	1.024	0.630	0.472	0.059	9	52	3	M6	0.22
	14	0.551										
	--	--										
16 SD-x	15	0.591	x 1.614	1.102	0.709	0.591	0.079	9	59	3	M6	0.22
	16	0.630										
	--	--										
18 SD-x	17	0.669	x 1.732	1.181	0.787	0.591	0.079	9	96	4	M6	0.22
	18	0.709										
	--	--										
20 SD-x	19	0.748	x 1.850	1.260	0.866	0.591	0.079	9	103	4	M6	0.44
	20	0.787										
	--	--										
25 SD-x	22	0.866	x 1.969	1.417	1.063	0.748	0.079	9	148	5	M6	0.44
	24	0.945										
	25*	0.984										
30 SD-x	26	1.024	x 2.362	1.732	1.260	0.748	0.118	9	221	6	M6	0.66
	28	1.102										
	30	1.181										
35 SD-x	32	1.260	x 2.835	2.047	1.496	0.827	0.118	22	332	5	M8	1.10
	35	1.378										
	36	1.417										
40 SD-x	38	1.496	x 3.150	2.402	1.811	0.906	0.118	22	531	6	M8	1.32
	40	1.575										
	44	1.732										
50 SD-x	42	1.654	x 3.543	2.677	2.087	0.984	0.118	22	738	8	M8	1.98
	45	1.772										
	50	1.969										
55 SD-x	45	1.772	x 3.937	2.835	2.283	1.063	0.118	22	1,180	8	M8	2.65
	52	2.047										
	55	2.165										
60 SD-x	50	1.969	x 4.331	3.150	2.480	1.063	0.118	22	1,475	9	M8	3.09
	60	2.362										
	62	2.441										
70 SD-x	60	2.362	x 4.528	3.386	2.913	1.063	0.157	22	1,549	9	M8	3.09
	65	2.559										
	70	2.756										
80 SD-x	70	2.756	x 5.433	3.937	3.307	1.142	0.157	45	2,950	10	M10	4.85
	75	2.953										
	80	3.150										
90 SD-x	80	3.150	x 6.102	4.488	3.701	1.378	0.157	45	4,204	12	M10	7.5
	85	3.346										
	90	3.543										
100 SD-x	90	3.543	x 6.693	4.882	4.094	1.575	0.157	75	6,196	12	M12	11.0
	95	3.740										
	100	3.937										
110 SD-x	100	3.937	x 7.283	5.354	4.567	1.850	0.197	75	6,786	12	M12	13.2
	105	4.134										
	110	4.331										

*Screws ISO 4762

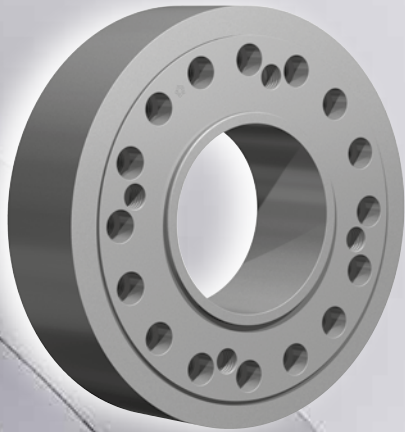
x = Configuration **SDA** = Thread in shrink disc without centering **SDB** = Thread in shrink disc with centering
SDC = Through boring in shrink disc without centering **SDD** = Through boring in shrink disc with centering

- ¹⁾ Shrink disc delivered without screws. Tightening torques for screws quantity see table
²⁾ The bore tolerance of the customer component should be within the fit tolerance G6 and H7

- Surface finishes
For shaft R_a ≤ 3,2 µm
- Tolerances
For shaft h9
- When using a hollow shaft instead of a solid shaft
please contact our Engineering-Team

Explanations to tables: Page 9

To continue see next page



Characteristics

Reduced dimensions – for lower transmissible torques, especially for applications with restricted space.

Slitted 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.

Type	Shrink Discs dimensions						T _A ¹⁾	Transmissible torques	Locking screws ¹⁾ ISO 4014 / 4017 - 10.9			
	d x D		d ₁	G ²⁾	L ₂	Z			T	Quantity	Thread	Gw
	mm	inch	inch	inch	inch	inch						
125 SD-x	115	4.528	6.299	4.961	1.969	0.197	185	14751	12	M16	19.8	
	120 x 215	4.724 x 8.465						15,489				
	125	4.921						15,489				
140 SD-x	130	5.118	6.772	5.748	2.126	0.197	185	19,177	14	M16	24.3	
	135 x 230	5.315 x 9.055						19,177				
	140	5.512						19,177				
155 SD-x	150	5.906	7.559	6.535	2.283	0.197	185	22,864	15	M16	33.1	
	155 x 263	6.102 x 10.354						22,864				
	160	6.299						22,864				
170 SD-x	160	6.299	8.031	6.929	2.441	0.197	185	26,552	16	M16	46.3	
	165 x 290	6.496 x 11.417						26,552				
	170	6.693						26,552				
180 SD-x	170	6.693	8.583	7.323	2.441	0.197	185	31,715	18	M16	48.5	
	175 x 300	6.890 x 11.811						31,715				
	180	7.087						31,715				
190 SD-x	180	7.087	9.134	7.717	3.110	0.197	361	44,254	15	M20	70.6	
	185 x 320	7.283 x 12.598						44,254				
	190	7.480						44,254				
200 SD-x	190	7.480	9.685	8.110	3.110	0.197	361	49,417	16	M20	81.6	
	195 x 340	7.677 x 13.386						49,417				
	200	7.874						49,417				
220 SD-x	200	7.874	10.630	8.898	3.858	0.197	627	68,593	14	M24	117	
	210 x 370	8.268 x 14.567						68,593				
	220	8.661						68,593				
240 SD-x	220	8.661	11.654	9.685	3.976	0.197	627	86,295	16	M24	146	
	230 x 405	9.055 x 15.945						86,295				
	240	9.449						86,295				
260 SD-x	240	9.449	12.520	10.472	4.409	0.197	627	92,933	16	M24	176	
	250 x 430	9.843 x 16.929						92,933				
	260	10.236						92,933				
280 SD-x	260	10.236	13.386	11.260	4.961	0.197	627	111,372	18	M24	227	
	270 x 460	10.630 x 18.110						111,372				
	280	11.024						111,372				
300 SD-x	280	11.024	14.173	12.047	5.118	0.197	627	131,286	20	M24	256	
	290 x 485	11.417 x 19.094						131,286				
	300	11.811						131,286				
320 SD-x	300	11.811	14.961	12.992	5.118	0.197	920	182,915	20	M27	295	
	300 x 520	11.811 x 20.472						182,915				
	320	12.598						182,915				
340 SD-x	300	11.811	15.827	13.780	5.669	0.197	920	202,830	21	M27	408	
	320 x 570	12.598 x 22.441						202,830				
	340	13.386						202,830				
360 SD-x	320	12.598	16.693	14.567	5.669	0.315	920	213,893	21	M27	379	
	340 x 590	13.386 x 23.228						213,893				
	360	14.173						213,893				
390 SD-x	350	13.780	18.031	15.748	5.827	0.315	1,250	267,735	20	M30	490	
	370 x 630	14.567 x 24.803						267,735				
	390	15.354						267,735				
420 SD-x	380	14.961	19.291	16.929	6.614	0.315	1,250	300,188	21	M30	558	
	400 x 650	15.748 x 25.591						300,188				
	420	16.535						300,188				
440 SD-x	400	15.748	20.157	17.717	6.929	0.315	1,250	314,201	21	M30	606	
	420 x 670	16.535 x 26.378						314,201				
	440	17.323						314,201				

Ordering examples: RfN 4022

Series	Type	d
RfN 4022	170 SDA	6.496
RfN 4022	170 SDB	6.496
RfN 4022	170 SDC	6.496
RfN 4022	170 SDD	6.496

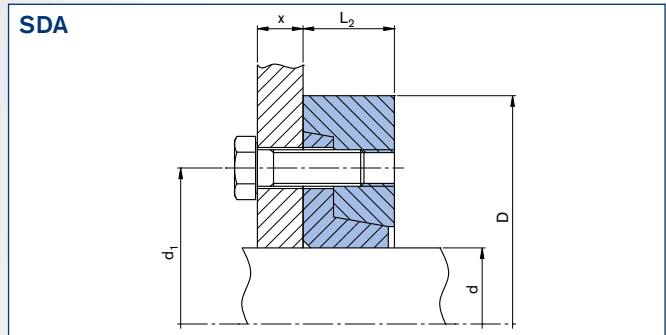
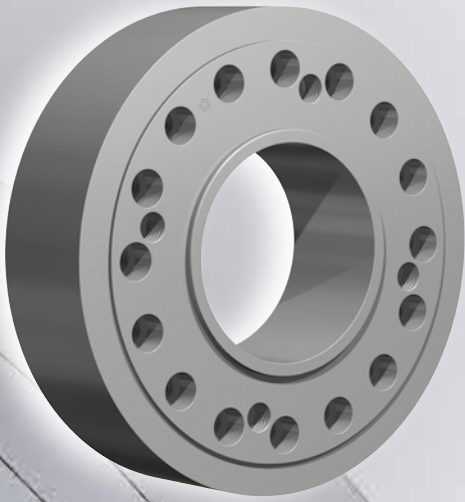
x = Configuration (Description of configurations see page 12)

- ¹⁾ Shrink disc delivered without screws. Tightening torques for screws quantity see table
²⁾ The bore tolerance of the customer component should be within the fit tolerance G6 and H7

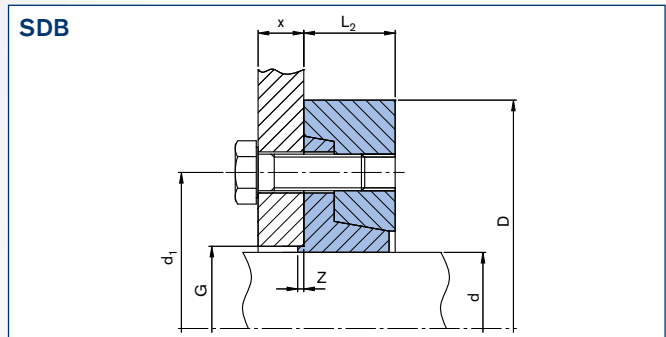
More sizes on request

- Surface finishes
For shaft R_a ≤ 3,2 μm
- Tolerances
For shaft h9
- When using a hollow shaft instead of a solid shaft please contact our Engineering-Team

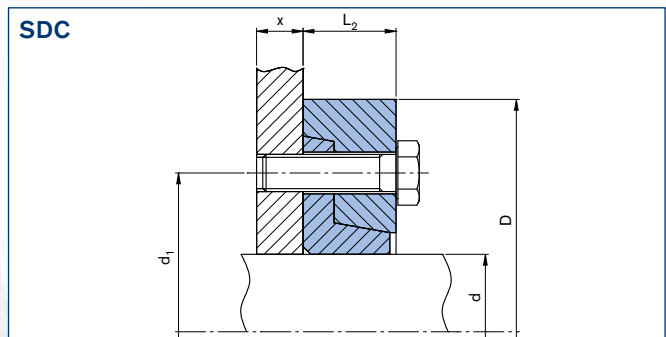
Description of configurations



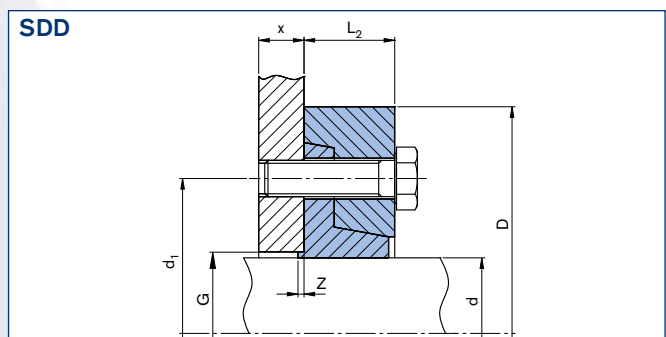
RfN 4023 configuration SDA thread in shrink disc without centering



RfN 4023 configuration SDB thread in shrink disc with centering



RfN 4023 configuration SDC through boring in shrink disc without centering



RfN 4023 configuration SDD through boring in shrink disc with centering

Type	Shrink Discs dimensions							T _A ¹⁾ ft-lbs	Transmissible torques T ft-lbs	Locking screws ¹⁾ ISO 4014 / 4017 - 10.9			
	d x D		d x D		d ₁	G ²⁾	L ₂			Z	Quantity	Thread	Gw lbs
	mm	inch	inch	inch	inch	inch	inch			inch			
50 SD-x	40		1.575						1,033	7	M12	4.41	
	45 x 115	1.772 x 4.528		3.307	2.087	1.181	0.118	75	1,623				
	50	1.969							2,434				
60 SD-x	50		1.969						1,696	9	M12	4.85	
	55 x 120	2.165 x 4.724		3.701	2.480	1.339	0.118	75	2,581				
	60	2.362							3,467				
70 SD-x	60		2.362						4,278	8	M16	10.4	
	65 x 155	2.559 x 6.102		4.409	2.913	1.575	0.157	185	5,605				
	70	2.756							6,933				
80 SD-x	70		2.756						5,900	9	M16	13.5	
	75 x 167	2.953 x 6.575		5.118	3.307	1.732	0.157	185	7,376				
	80	3.150							8,851				
90 SD-x	80		3.150						8,851	12	M16	17.6	
	85 x 185	3.346 x 7.283		5.669	3.701	1.969	0.157	185	11,063				
	90	3.543							13,276				
100 SD-x	90		3.543						11,801	14	M16	20.9	
	95 x 197	3.740 x 7.756		6.142	4.094	2.126	0.157	185	14,014				
	100	3.937							16,964				
110 SD-x	100		3.937						16,226	10	M20	26.5	
	105 x 215	4.134 x 8.465		6.535	4.567	2.283	0.197	361	19,177				
	110	4.331							19,914				
120 SD-x	110		4.331						24,340	14	M20	33.1	
	115 x 230	4.528 x 9.055		7.323	4.961	2.559	0.197	361	28,027				
	120	4.724							31,715				
140 SD-x	120		4.724						28,765	16	M20	66.2	
	130 x 290	5.118 x 11.417		8.504	5.748	2.992	0.197	361	36,878				
	140	5.512							41,303				
160 SD-x	140		5.512						47,204	14	M24	88.2	
	150 x 320	5.906 x 12.598		9.213	6.535	3.268	0.197	627	56,792				
	160	6.299							56,792				
180 SD-x	160		6.299						62,693	16	M24	106	
	170 x 340	6.693 x 13.386		10.866	7.323	3.701	0.197	627	74,494				
	180	7.087							76,706				
200 SD-x	180		7.087						84,082	16	M27	126	
	190 x 370	7.480 x 14.567		11.417	8.110	3.780	0.197	920	98,096				
	200	7.874							106,209				
220 SD-x	200		7.874						117,272	18	M27	157	
	210 x 405	8.268 x 15.945		12.598	8.898	3.819	0.197	920	131,286				
	220	8.661							131,286				

x = Configuration SDA = Thread in shrink disc without centering SDB = Thread in shrink disc with centering
SDC = Through boring in shrink disc without centering SDD = Through boring in shrink disc with centering

- ¹⁾ Shrink disc delivered without screws. Tightening torques for screws quantity see table
²⁾ The bore tolerance of the customer component should be within the fit tolerance G6 and H7

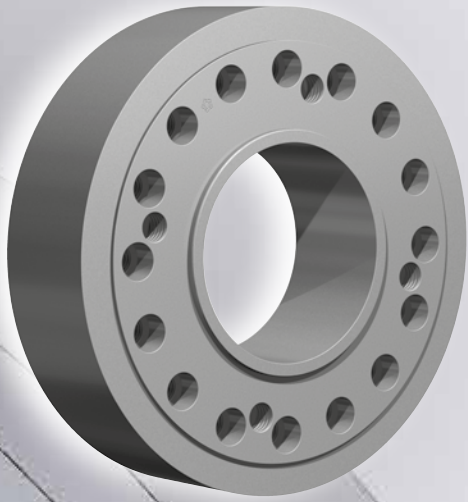
- Surface finishes
For shaft R_a ≤ 3,2 μm
- Tolerances
For shaft h9
- When using a hollow shaft instead of a solid shaft please contact our Engineering-Team

Explanations to tables: Page 9

To continue see next page

Ordering examples: RfN 4023

Series	Type	d
RfN 4023	50 SDA	1.772
RfN 4023	50 SDB	1.772
RfN 4023	50 SDC	1.772
RfN 4023	50 SDD	1.772



Characteristics

Heavy design – suitable for high torque and bending moments.

Slitted 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.

Type	Shrink Discs dimensions							T _A ¹⁾ ft-lbs	Transmissible torques T ft-lbs	Locking screws ¹⁾ ISO 4014 / 4017 - 10.9		
	d x D		d ₁	G ²⁾	L ₂	Z	Quantity			Thread	Gw	
	mm	inch	inch	inch	inch	inch					lbs	
240 SD-x	220	8.661	13.386	9.685	4.331	0.197	920	155,626	20	M27	190	
	230 x 430	9.055 x 16.929						155,626				
	240	9.449						155,626				
260 SD-x	240	9.449	14.016	11.260	4.685	0.197	920	172,590	21	M27	240	
	250 x 460	9.843 x 18.110						172,590				
	260	10.236						171,114				
280 SD-x	260	10.236	14.173	12.047	4.921	0.197	920	172,590	21	M27	276	
	270 x 485	10.630 x 19.094						172,590				
	280	11.024						172,590				
300 SD-x	280	11.024	14.961	12.992	5.118	0.197	920	182,178	21	M27	318	
	290 x 520	11.417 x 20.472						182,178				
	300	11.811						182,178				
320 SD-x	300	11.811	15.827	13.780	5.354	0.315	920	220,531	24	M27	368	
	310 x 550	12.205 x 21.654						220,531				
	320	12.598						220,531				
340 SD-x	320	12.598	16.693	14.567	5.591	0.315	920	232,332	24	M27	404	
	330 x 570	12.992 x 22.441						232,332				
	340	13.386						232,332				
360 SD-x	340	13.386	17.874	15.748	5.787	0.315	1,250	302,400	24	M30	481	
	350 x 610	13.780 x 24.016						302,400				
	360	14.173						302,400				
390 SD-x	360	14.173	19.134	16.929	6.575	0.315	1,250	323,790	24	M30	551	
	380 x 630	14.961 x 24.803						323,790				
	390	15.354						323,790				
420 SD-x	390	15.354	19.921	17.717	6.890	0.394	1,250	337,066	24	M30	644	
	410 x 670	16.142 x 26.378						337,066				
	420	16.535						337,066				
440 SD-x	400	15.748	21.024	18.504	6.890	0.394	1,250	414,510	28	M30	701	
	420 x 700	16.535 x 27.559						414,510				
	440	17.323						414,510				

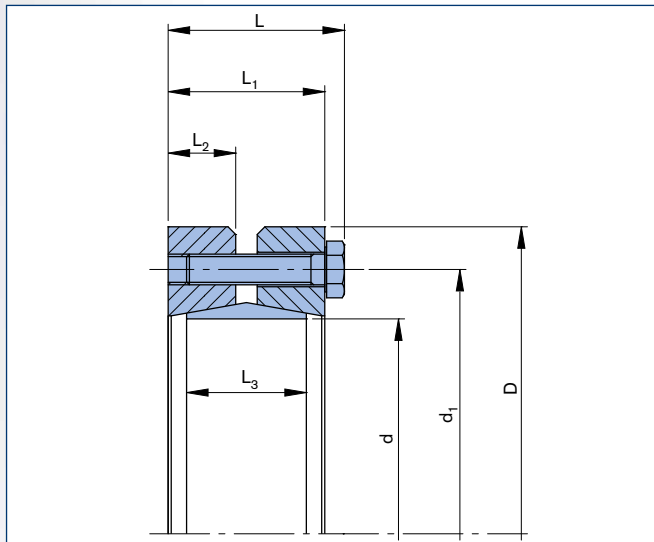
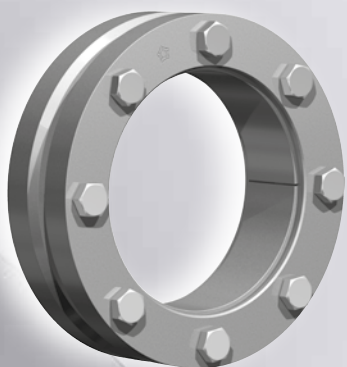
x = Configuration SDA = Thread in shrink disc without centering SDB = Thread in shrink disc with centering
SDC = Through boring in shrink disc without centering SDD = Through boring in shrink disc with centering

¹⁾ Shrink disc delivered without screws. Tightening torques for screws quantity see table
²⁾ The bore tolerance of the customer component should be within the fit tolerance G6 and H7

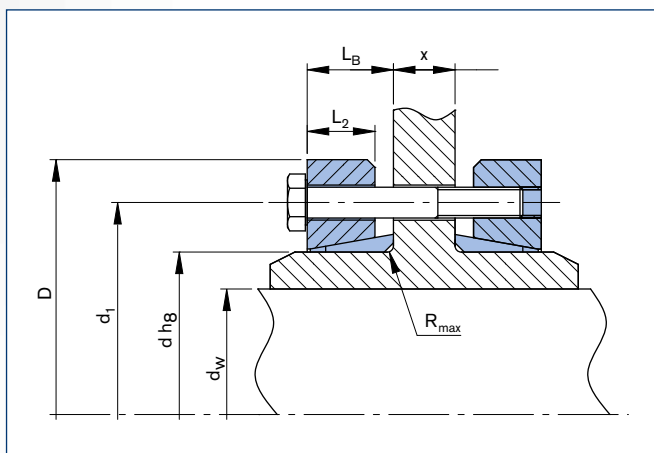
- Surface finishes For shaft R_a ≤ 3,2 μm
 - Tolerances For shaft h9
 - When using a hollow shaft instead of a solid shaft please contact our Engineering-Team
- [Explanations to tables: Page 9](#) [More sizes on request](#)

Ordering examples: RfN 4023

Series	Type	d
RfN 4023	280 SDA	10.630
RfN 4023	280 SDB	10.630
RfN 4023	280 SDC	10.630
RfN 4023	280 SDD	10.630



RINGFEDER® Shrink Disc RfN 4051 · Dimensions



RINGFEDER® Shrink Disc RfN 4051 GT · Location

Shrink discs GT (split)

In the application shown above special screws according to the dimension X are required, which have to be ordered accordingly. When dimension „ X “ larger than $2 \cdot L_1$ is chosen, a reduction of the transmissible torque up to 50% has to be considered to the type GT.

Shrink Discs dimensions											Transmissible torques or axial forces				Locking screws ¹⁾ ISO 4014 / 4017 - 10.9						
d x D		d x D		d _w	d ₁	L	L ₁	L ₂	L ₃	L _B	T _A ¹⁾	T	F _{ax}	P	σ _v	Quantity	Thread	Gw	T _{max}		
mm		inch		inch	inch	inch	inch	inch	inch	inch	ft-lbs	ft-lbs	lbs	psi	psi			lbs	ft-lbs		
125	x	185	4.921	x	7.283	3.740	6.220	2.283	2.008	0.866	1.535	1.201	45	7,781	49,458	27,723	40,350	8	M10	11.2	9,736
						3.937								8,925	53,954		41,802				11,156
						4.134								10,178	58,451		43,645				12,723
140	x	220	5.512	x	8.661	4.331	6.890	2.283	2.008	0.866	1.535	1.215	45	10,916	59,575	27,868	38,899	9	M10	17.6	13,645
						4.724								13,748	69,691		40,786				17,185
						4.921								15,120	73,063		45,721				18,900
155	x	245	6.102	x	9.646	5.118	7.559	2.283	2.008	0.866	1.535	1.201	45	17,702	82,056	30,771	42,527	11	M10	22.0	22,127
						5.315								19,472	87,676		44,414				24,340
						5.512								21,390	92,172		48,478				26,737
165	x	260	6.496	x	10.236	5.709	8.268	2.756	2.441	1.024	1.811	1.417	75	28,396	119,149	32,512	47,462	10	M12	30.9	35,495
						5.512								25,962	112,405		44,705				32,453
						5.315								23,602	106,785		43,253				29,502
175	x	275	6.890	x	10.827	6.102	8.661	2.756	2.441	1.024	1.811	1.417	75	33,928	132,638	33,674	48,478	11	M12	32.4	42,410
						5.709								28,765	120,273		43,834				35,956
						5.906								31,273	125,894		45,430				39,091
185	x	295	7.283	x	11.614	6.496	8.858	2.756	2.441	1.024	1.811	1.417	75	39,829	146,126	34,835	49,494	12	M12	37.9	49,785
						6.299								37,100	140,506		46,301				46,374
						6.102								34,371	134,886		44,560				42,963
195	x	315	7.677	x	12.402	6.890	9.331	3.150	2.835	1.220	2.205	1.614	75	53,474	185,468	33,819	51,526	15	M12	52.5	66,842
						6.693								49,933	178,724		46,882				62,416
						6.496								46,467	170,856		44,414				58,083
200	x	330	7.874	x	12.992	7.283	9.528	3.150	2.835	1.220	2.205	1.614	75	62,325	205,701	35,270	63,864	16	M12	59.1	77,905
						6.890								54,580	191,088		48,478				68,224
						7.087								58,637	200,081		53,413				73,295
220	x	345	8.661	x	13.583	7.874	10.433	3.701	3.307	1.417	2.598	1.850	185	77,445	237,175	31,932	53,268	10	M16	70.5	96,805
						7.480								68,963	220,314		44,414				86,203
						7.087								61,071	206,825		40,205				76,338
240	x	370	9.449	x	14.567	7.874	11.417	3.701	3.307	1.417	2.598	1.850	185	83,345	255,159	35,270	44,124	12	M16	79.4	104,181
						8.268								94,040	272,020		47,898				117,549
						8.465								99,203	281,012		51,672				124,003
260	x	395	10.236	x	15.551	9.252	12.205	4.016	3.622	1.575	2.835	2.067	185	127,600	331,595	34,835	52,833	14	M16	106.0	159,498
						8.661								109,898	303,494		43,979				137,371
						9.055								121,699	322,602		48,478				152,122
280	x	425	11.024	x	16.732	9.843	13.110	4.488	4.094	1.811	3.307	2.343	185	153,415	373,185	31,642	47,027	16	M16	132.0	191,766
						9.449								139,401	352,952		41,657				174,249
						9.055								126,124	333,843		39,189				157,654
300	x	460	11.811	x	18.110	9.843	14.094	4.488	4.094	1.811	3.307	2.343	185	158,578	386,673	33,238	40,495	18	M16	154.0	198,220
						10.630								188,080	424,891		49,640				235,098
						10.236								172,591	404,658		43,979				215,377
320	x	495	12.598	x	19.488	11.417	14.882	4.567	4.173	1.890	3.307	2.382	185	225,696	477,721	34,690	51,526	20	M16	185.0	282,117
						10.630								191,768	436,131		42,527				239,708
						11.024								209,470	456,364		45,430				261,835
340	x	535	13.386	x	21.063	12.008	15.827	4.567	4.173	1.890	3.307	2.382	185	248,561	496,830	34,254	47,317	21	M16	220.0	310,698
						11.811								238,973	485,590		44,850				298,713
						11.417								221,271	465,357		41,802				276,586
350	x	545	13.780	x	21.457	11.811	16.260	5.315	4.803	2.126	3.937	2.697	361	274,376	558,653	33,383	42,382	16	M20	265.0	342,966
						12.008								283,964	571,017		44,124				354,952
						12.205								295,028	582,258		46,446				368,781
360	x	555	14.173	x	21.850	12.598	16.654	5.315	4.803	2.126	3.937	2.697	361	306,092	582,258	32,367	45,576	16	M20	276.0	382,610
						11.811								265,525	539,544		39,189				331,903
						12.205								286,177	562,025		41,221				357,718
380	x	585	14.961	x	23.031	12.992	17.402	5.866	5.354	2.362	4.409	2.972	361	344,445	637,336	30,916	41,366	18	M20	331.0	430,552
						12.795								332,644	624,972		39,915				415,801
						12.598								320,843	611,483		38,899				401,049
390	x	595	15.354	x	23.425	12.992	17.795	5.866	5.354	2.362	4.409	3.071	361	372,473	687,919	33,383	41,366	20	M20	344.0	465,586
						13.386								388,288	713,772		44,124				497,854
						13.780								425,578	740,749		48,914				531,967

¹⁾ Shrink disc GT (split) delivered without screws. Tightening torques for screws quantity see table

- Surface finishes
For shaft $R_a \leq 3,2 \mu\text{m}$
- Tolerances
For shaft see table page 8
- When using a hollow shaft instead of a solid shaft
please contact our Engineering-Team

Explanations to tables: Page 9

To continue see next page

Characteristics

Light design – suitable for medium transmissible values when space is limited.

Slitted 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.

Shrink discs GT (split)

In the application shown above special screws according to the dimension X are required, which have to be ordered accordingly. When dimension „X“ larger than $2 \cdot L_1$ (RfN 4051 Light Duty Series, Page 20) is chosen, a reduction of the transmissible torque up to 50% has to be considered to the type GT.

Shrink Discs dimensions											Transmissible torques or axial forces				Locking screws ¹⁾ ISO 4014 / 4017 - 10.9						
d	x	D	d	x	D	d _w	d ₁	L	L ₁	L ₂	L ₃	L _B	T _A ¹⁾	T	F _{ax}	P	σ _v	Quantity	Thread	Gw	T _{max}
mm		inch	mm		inch	inch	inch	inch	inch	inch	inch	inch	ft-lbs	ft-lbs	lbs	psi	psi			lbs	ft-lbs
400	x	615	15.748	x	24.213	14.173	18.189	5.866	5.354	2.362	4.409	3.071	361	461,719	782,339	34,254	50,075	21	M20	362.0	577,142
						13.386								405,664	727,260		42,237				507,074
						13.780								432,954	755,362		45,140				541,186
420	x	630	16.535	x	24.803	14.567	19.094	6.181	5.669	2.520	4.724	3.228	361	483,108	796,951	31,787	43,108	22	M20	408.0	603,879
						14.173								455,081	769,974		40,205				568,845
						13.780								426,315	741,873		38,463				532,889
440	x	660	17.323	x	25.984	14.567	19.882	6.181	5.669	2.520	4.724	3.228	361	499,335	822,805	33,238	39,770	24	M20	452.0	624,162
						14.961								530,313	850,906		41,657				662,884
						15.354								562,028	879,007		44,850				702,528
460	x	685	18.110	x	26.969	16.142	20.748	6.732	6.220	2.795	5.197	3.602	361	689,628	1,029,630	33,674	47,608	28	M20	518.0	862,948
						15.354								619,559	971,179		41,076				774,440
						15.748								656,437	1,002,653		43,398				820,538
480	x	715	18.898	x	28.150	16.535	21.535	6.732	6.220	2.795	5.197	3.602	361	694,053	1,007,149	32,222	42,092	28	M20	562.0	867,557
						16.732								712,493	1,022,436		43,689				890,606
						16.142								657,175	977,924		39,915				821,460
500	x	750	19.685	x	29.528	16.732	22.323	6.732	6.220	2.795	5.197	3.602	361	727,244	1,044,242	33,093	39,915	30	M20	628.0	909,045
						16.929								747,158	1,059,305		40,786				933,938
						17.323								786,250	1,089,204		43,108				982,801

¹⁾ Shrink disc GT (split) delivered without screws. Tightening torques for screws quantity see table

■ Surface finishes
For shaft $R_a \leq 3,2 \mu\text{m}$

■ Tolerances
For shaft see table page 8

[Explanations to tables: Page 9](#)

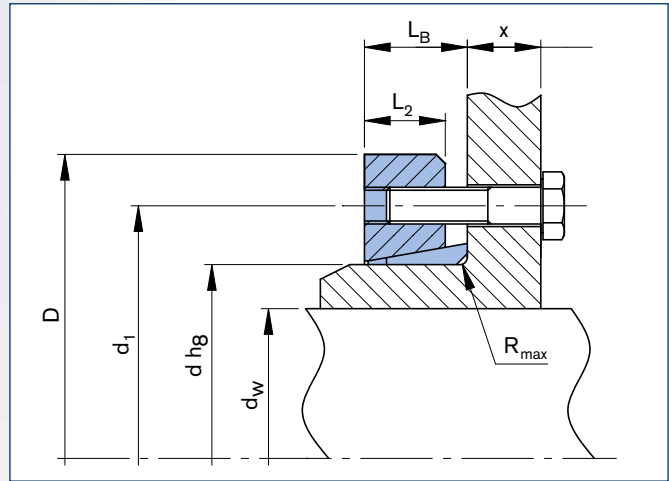
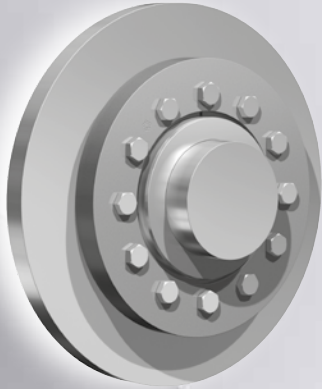
[More sizes on request](#)

■ When using a hollow shaft instead of a solid shaft
please contact our Engineering-Team

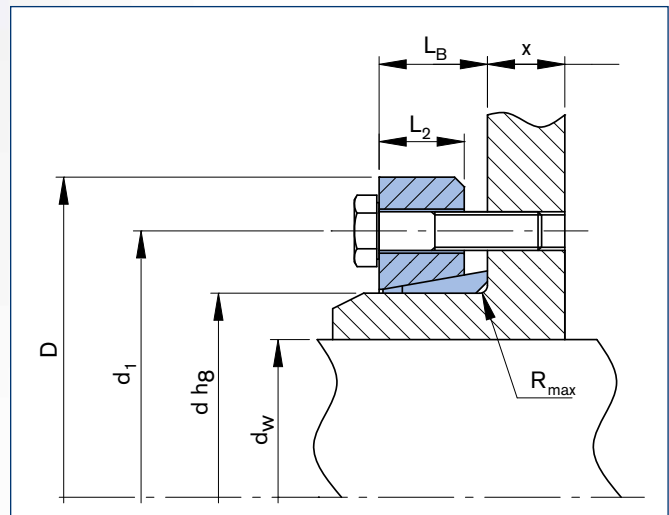
Ordering examples: RfN 4051

Series	d	D	Version
RfN 4051	16.535	24.803	-
RfN 4051	16.535	24.803	GT

GT = Split



RINGFEDER® Shrink Disc RfN 4051 HT · Dimensions



RINGFEDER® Shrink Disc RfN 4051 HC · Dimensions

Half shrink discs

Type HT (Threaded holes in thrust ring)

Type HC (Clearance holes in thrust ring)

Shrink Discs dimensions										Transmissible torques or axial forces		Locking screws ¹⁾ ISO 4014 / 4017 - 10.9				
d	x	D	d	x	D	d _w	d ₁	L _B	L ₂	R	T _A ¹⁾	T	F _{ax}	Quantity	Thread	Gw
mm			inch			inch	inch	inch	inch	inch	ft-lbs	ft-lbs	lbs			lbs
125	x	185	4.921	x	7.283	3.740	6.220	1.201	0.866	0.189	45	3,891	24,747	8	M10	5.51
						3.937						4,462	26,997			
						4.134						5,089	29,247			
140	x	220	5.512	x	8.661	4.331	6.890	1.215	0.866	0.189	45	5,458	29,697	9	M10	8.82
						4.724						6,874	34,871			
						4.921						7,560	36,446			
155	x	245	6.102	x	9.646	5.118	7.559	1.201	0.866	0.189	45	8,851	40,946	11	M10	11.0
						5.315						9,736	43,870			
						5.512						10,695	46,120			
165	x	260	6.496	x	10.236	5.315	8.268	1.417	1.024	0.189	75	11,801	53,319	10	M12	15.4
						5.512						12,981	56,244			
						5.709						14,198	59,619			
175	x	275	6.890	x	10.827	5.709	8.661	1.417	1.024	0.189	75	14,382	60,069	11	M12	15.9
						5.906						15,636	62,993			
						6.102						16,964	66,368			
185	x	295	7.283	x	11.614	6.102	8.858	1.417	1.024	0.189	75	17,185	67,493	12	M12	18.7
						6.299						18,550	70,305			
						6.496						19,914	73,117			
195	x	315	7.677	x	12.402	6.496	9.331	1.614	1.220	0.189	75	23,233	85,491	15	M12	25.8
						6.693						24,966	89,428			
						6.890						26,737	92,803			
200	x	330	7.874	x	12.992	6.890	9.528	1.614	1.220	0.189	75	27,290	95,615	16	M12	28.9
						7.087						29,318	100,114			
						7.283						31,162	102,927			
220	x	345	8.661	x	13.583	7.087	10.433	1.850	1.417	0.189	185	30,535	103,489	10	M16	34.4
						7.480						34,481	110,238			
						7.874						38,722	118,675			
240	x	370	9.449	x	14.567	7.874	11.417	1.850	1.417	0.189	185	41,672	127,674	12	M16	38.6
						8.268						47,020	136,110			
						8.465						49,601	140,610			
260	x	395	10.236	x	15.551	8.661	12.205	2.067	1.575	0.252	185	54,948	151,859	14	M16	52.9
						9.055						60,849	161,420			
						9.252						63,799	165,920			
280	x	425	11.024	x	16.732	9.055	13.110	2.343	1.811	0.252	185	63,062	167,045	16	M16	66.1
						9.449						69,700	176,606			
						9.843						76,706	186,730			
300	x	460	11.811	x	18.110	9.843	14.094	2.343	1.811	0.252	185	79,288	193,479	18	M16	76.1
						10.236						86,295	202,478			
						10.630						94,039	212,602			
320	x	495	12.598	x	19.488	10.630	14.882	2.382	1.890	0.252	185	95,883	218,227	20	M16	92.6
						11.024						104,734	228,351			
						11.417						112,847	239,037			
340	x	535	13.386	x	21.063	11.417	15.827	2.382	1.890	0.252	185	110,634	232,850	21	M16	110
						11.811						119,485	242,974			
						12.008						124,279	248,598			
350	x	545	13.780	x	21.457	11.811	16.260	2.697	2.126	0.252	361	137,187	279,533	16	M20	132
						12.008						141,981	285,720			
						12.205						147,512	291,344			
360	x	555	14.173	x	21.850	11.811	16.654	2.697	2.126	0.252	361	132,761	269,971	16	M20	138
						12.205						143,087	281,220			
						12.598						153,044	291,344			
380	x	585	14.961	x	23.031	12.598	17.402	2.972	2.362	0.252	361	160,420	305,967	18	M20	165
						12.795						166,320	312,717			
						12.992						172,221	318,903			
390	x	595	15.354	x	23.425	12.992	17.795	3.071	2.362	0.331	361	186,234	344,213	20	M20	172
						13.386						199,142	357,149			
						13.780						212,787	370,648			

¹⁾ Shrink disc delivered without screws. Tightening torques for screws quantity see table

- Surface finishes
For shaft R_a ≤ 3,2 µm
- Tolerances
For shaft see table page 8
- When using a hollow shaft instead of a solid shaft
please contact our Engineering-Team

Explanations to tables: Page 9

To continue see next page

Characteristics

Light design – suitable for medium transmissible values when space is limited.

Slitted 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.

Half shrink discs

Type HT (Threaded holes in thrust ring)

Type HC (Clearance holes in thrust ring)

Shrink Discs dimensions										T _A ¹⁾	Transmissible torques or axial forces		Locking screws ¹⁾ ISO 4014 / 4017 - 10.9		Gw	
d	x	D	d	x	D	d _w	d ₁	L _B	L ₂		R	T	F _{ax}	Quantity		Thread
mm			inch			inch	inch	inch	inch	inch	ft-lbs	lbs			lbs	
400	x	615	15.748	x	24.213	13.386	18.189	3.071	2.362	0.331	361	202,830	363,899	21	M20	177
						13.780						216,474	377,960			
						14.173						230,857	391,458			
420	x	630	16.535	x	24.803	13.780	19.094	3.228	2.520	0.331	361	213,155	371,210	22	M20	204
						14.173						227,538	385,271			
						14.567						241,562	398,770			
440	x	660	17.323	x	25.984	14.567	19.882	3.228	2.520	0.331	361	249,665	411,706	24	M20	226
						14.961						265,154	425,767			
						15.354						281,011	439,828			
460	x	685	18.110	x	26.969	15.354	20.748	3.602	2.795	0.390	361	309,776	485,948	28	M20	259
						15.748						328,215	501,696			
						16.142						344,810	515,195			
480	x	715	18.898	x	28.150	16.142	21.535	3.602	2.795	0.390	361	328,584	489,323	28	M20	281
						16.535						347,023	503,946			
						16.732						356,242	511,595			
500	x	750	19.685	x	29.528	16.732	22.323	3.602	2.795	0.390	361	363,618	522,507	30	M20	314
						16.929						373,575	530,043			
						17.323						393,121	545,004			

¹⁾ Shrink disc delivered without screws. Tightening torques for screws quantity see table

- Surface finishes
For shaft R_a ≤ 3,2 μm
- Tolerances
For shaft see table page 8
- When using a hollow shaft instead of a solid shaft
please contact our Engineering-Team

[Explanations to tables: Page 9](#)

Ordering examples: RfN 4051

Series	d	D	Version
RfN 4051	16.535	24.803	HT
RfN 4051	16.535	24.803	HC

HT = Half shrink disc with threaded holes in thrust ring

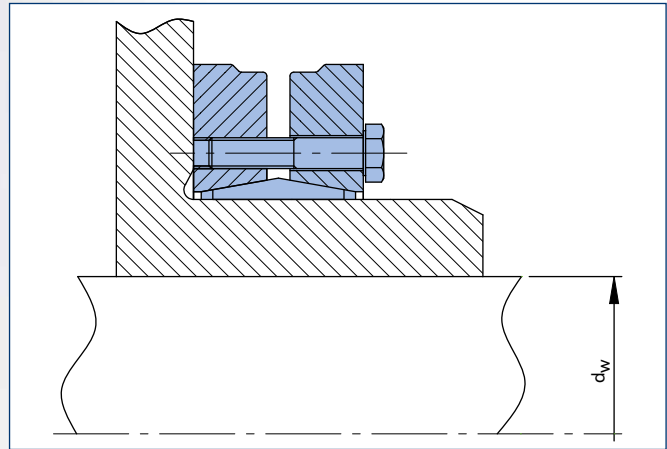
HC = Half shrink disc with clearance holes in thrust ring



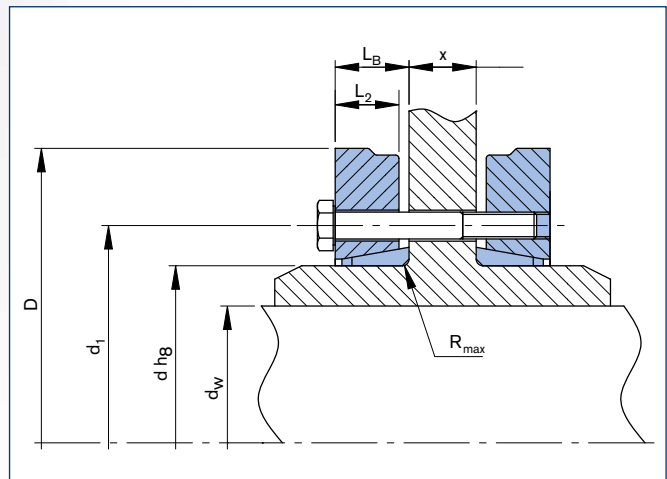
**OPTIONAL
NICKEL PLATED**

Shrink discs GT (split)

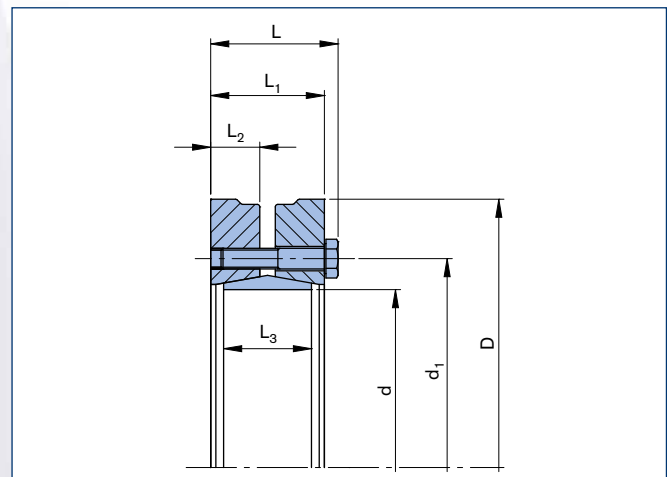
In the application shown above special screws according to the dimension X are required, which have to be ordered accordingly. When dimension „X“ larger than $2 \cdot L_1$ (RfN 4061 Standard Series, Page 28) is chosen, a reduction of the transmissible torque up to 50% has to be considered to the type GT.



RINGFEDER® Shrink Disc RfN 4061 · Location



RINGFEDER® Shrink Disc RfN 4061 GT · Location



RINGFEDER® Shrink Disc RfN 4061 · Dimensions

Shrink Discs dimensions												Transmissible torques or axial forces				Locking screws ¹⁾ ISO 4014 / 4017 - 10.9					
d	x	D	d	x	D	d _w	d ₁	L	L ₁	L ₂	L ₃	L _B	T _A ¹⁾	T	F _{ax}	P	σ _v	Quantity	Thread	G _w	T _{max}
mm		inch	mm		inch	mm	mm	mm	mm	mm	mm	mm	mm	ft-lbs	lbs	psi	psi			lbs	ft-lbs
14	x	37	0.551	x	1.457	0.394	0.945	0.583	0.472	0.197	0.354	0.374	2	22	1,800	40,350	60,235	3	M4*	0.2	28
						0.472								27	1,800		68,799				34
						0.472								35	2,250		80,846				44
16	x	41	0.630	x	1.614	0.472	1.063	0.728	0.591	0.246	0.472	0.374	3	52	3,375	48,769	73,879	4	M5	0.2	66
						0.512								66	4,050		83,458				81
						0.551								81	4,500		112,342				96
18	x	44	0.709	x	1.732	0.551	1.142	0.728	0.591	0.246	0.472	0.374	3	66	3,600	43,398	66,622	4	M5	0.4	81
						0.591								74	4,050		75,911				96
						0.630								89	4,500		102,327				118
20	x	46	0.787	x	1.811	0.591	1.260	0.827	0.689	0.276	0.472	0.453	3	81	4,500	48,769	67,057	5	M5	0.4	103
						0.630								103	4,949		72,137				125
						0.669								118	5,399		84,184				148
21	x	50	0.827	x	1.969	0.630	1.417	0.886	0.748	0.315	0.591	0.465	3.7	148	6,974	55,736	77,507	6	M5	0.4	184
						0.669								170	7,649		87,377				214
						0.709								192	8,324		108,278				243
24	x	50	0.945	x	1.969	0.748	1.417	0.886	0.748	0.315	0.591	0.465	3.7	177	7,199	48,769	71,847	6	M5	0.4	221
						0.787								199	7,874		80,410				251
						0.827								221	8,549		98,553				288
30	x	52	1.181	x	2.047	0.945	1.634	1.024	0.886	0.374	0.709	0.504	3.7	258	8,549	37,883	56,607	7	M5	0.4	332
						0.984								295	9,224		61,832				369
						1.024								325	9,674		71,411				413
36	x	72	1.417	x	2.835	1.102	2.047	1.083	0.925	0.394	0.709	0.543	9	435	11,924	43,979	56,607	5	M6	1.1	538
						1.181								509	13,049		63,574				634
						1.220								516	13,049		77,798				656
38	x	72	1.496	x	2.835	1.142	2.165	1.181	1.024	0.413	0.827	0.598	9	516	13,949	42,818	54,865	6	M6	1.1	656
						1.181								568	14,623		57,187				715
						1.220								575	14,173		68,799				723
40	x	72	1.575	x	2.835	1.181	2.244	1.122	0.965	0.413	0.748	0.583	9	531	13,724	44,995	54,429	6	M6	1.1	664
						1.220								538	13,274		65,315				671
						1.260								583	13,949		66,767				730
44	x	80	1.732	x	3.150	1.260	2.480	1.181	1.024	0.433	0.787	0.602	9	590	14,173	45,285	62,267	7	M6	1.1	738
						1.378								738	16,423		64,444				922
						1.417								774	17,098		66,476				996
48	x	80	1.890	x	3.150	1.417	2.677	1.181	1.024	0.433	0.866	0.622	9	664	14,623	37,738	53,849	7	M6	1.3	848
						1.496								774	16,198		55,155				996
						1.575								885	17,548		58,493				1,143
50	x	90	1.969	x	3.543	1.496	2.756	1.240	1.083	0.472	0.886	0.642	9	996	20,023	45,576	60,671	9	M6	2	1,217
						1.575								1,106	21,598		62,848				1,401
						1.654								1,254	23,173		67,783				1,586
55	x	100	2.165	x	3.937	1.654	2.953	1.358	1.201	0.512	0.906	0.701	9	959	17,548	35,996	49,785	8	M6	2.4	1,180
						1.772								1,143	19,573		52,107				1,438
						1.890								1,328	21,598		59,509				1,696
62	x	110	2.441	x	4.331	1.890	3.386	1.358	1.201	0.512	0.906	0.701	9	1,770	28,347	47,898	59,074	12	M6	2.9	2,213
						1.969								1,955	29,922		60,816				2,434
						2.047								2,065	30,597		69,960				2,581
68	x	115	2.677	x	4.528	1.969	3.386	1.358	1.201	0.512	0.925	0.701	9	1,401	21,373	35,561	45,576	10	M6	3.1	1,733
						2.165								1,660	23,398		53,268				2,102
						2.362								2,102	27,222		59,655				2,655
75	x	138	2.953	x	5.433	2.165	3.937	1.488	1.280	0.551	0.984	0.776	22	1,955	27,222	40,205	54,720	7	M8	5.1	2,434
						2.362								2,434	31,272		55,445				3,061
						2.559								2,987	35,546		60,380				3,762
80	x	145	3.150	x	5.709	2.362	3.937	1.488	1.280	0.551	0.984	0.776	22	2,360	28,347	37,593	51,236	7	M8	5.5	2,950
						2.559								2,876	32,172		51,962				3,614
						2.756								3,393	35,996		56,897				4,241

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

¹⁾ Shrink disc GT (split) delivered without screws. Tightening torques for screws quantity see table

■ Surface finishes
For shaft R_a ≤ 3,2 μm

■ Tolerances
For shaft see table page 8

Explanations to tables: Page 9

To continue see next page

■ When using a hollow shaft instead of a solid shaft
please contact our Engineering-Team

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.

Slitted 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.



OPTIONAL
NICKEL PLATED

Shrink Discs dimensions											Transmissible torques or axial forces		Locking screws ¹⁾ ISO 4014 / 4017 - 10.9								
d	x	D	d	x	D	d _w	d ₁	L	L ₁	L ₂	L ₃	L _B	T _A ¹⁾	T	F _{ax}	P	σ _v	Quantity	Thread	Gw	T _{max}
mm		inch	inch	inch	inch	inch	inch	inch	inch	inch	inch	inch	ft-lbs	ft-lbs	lbs	psi	psi			lbs	ft-lbs
85	x	155	3.346	x	6.102	2.362	4.488	1.803	1.594	0.630	1.181	0.906	22	3,577	42,520	47,172	58,639	11	M8	7.7	4,462
						2.559								4,278	47,695		61,977				5,347
						2.756								5,015	52,869		61,977				6,269
90	x	155	3.543	x	6.102	2.559	4.488	1.752	1.535	0.669	1.181	0.906	22	3,540	39,146	39,770	51,236	10	M8	7.2	4,425
						2.756								4,462	43,870		51,672				5,569
						2.953								5,384	48,370		53,994				6,749
95	x	170	3.740	x	6.693	2.559	5.000	2.067	1.858	0.748	1.339	0.925	22	3,946	43,870	39,915	50,656	12	M8	10.4	4,942
						2.756								4,979	48,820		50,656				6,232
						2.953								6,011	53,994		51,526				7,523
100	x	170	3.937	x	6.693	2.756	5.000	2.067	1.858	0.748	1.339	1.004	22	5,126	45,445	37,883	48,043	12	M8	9.9	6,417
						2.953								5,605	50,170		48,043				7,007
						3.150								6,712	55,119		49,059				8,371
110	x	185	4.331	x	7.283	2.953	5.709	2.339	2.087	0.906	1.654	1.122	45	6,011	58,269	36,867	45,866	10	M10	13.9	7,486
						3.150								7,449	64,118		45,866				9,293
						3.346								8,998	66,593		51,817				11,248
115	x	185	4.528	x	7.283	3.150	5.709	2.457	2.205	0.906	1.654	1.260	45	7,007	60,069	35,270	43,834	10	M10	13.4	8,740
						3.543								8,925	67,943		49,640				11,137
						3.740								10,363	74,017		51,236				12,944
125	x	215	4.921	x	8.465	3.346	6.299	2.378	2.126	0.906	1.654	1.260	45	8,150	67,493	39,044	51,381	12	M10	19.2	10,178
						3.543								9,662	73,567		51,091				12,059
						3.740								11,174	79,866		51,091				13,977
140	x	230	5.512	x	9.055	3.740	6.890	2.677	2.382	1.024	1.811	1.398	75	11,137	82,116	38,173	48,769	10	M12	23.4	13,903
						3.937								12,944	88,866		48,624				16,153
						4.134								14,751	95,390		48,624				18,439
165	x	290	6.496	x	11.417	4.528	8.268	3.189	2.795	1.220	2.205	1.594	185	23,159	135,211	40,641	48,478	8	M16	47.8	28,986
						4.724								26,183	143,310		48,624				32,748
						4.921								29,060	149,384		50,510				36,325
185	x	330	7.283	x	12.992	5.315	9.291	3.795	3.402	1.504	2.795	1.890	185	38,722	176,831	35,706	44,560	10	M16	79.4	48,384
						5.512								42,299	186,280		44,995				52,846
						5.709								46,024	195,729		45,576				57,530
195	x	350	7.677	x	13.780	5.512	9.685	3.780	3.386	1.504	2.795	1.890	185	48,642	212,152	40,641	48,188	12	M16	88.2	60,812
						5.906								57,235	232,850		49,059				71,544
						6.102								61,771	243,199		50,075				77,223
200	x	350	7.874	x	13.780	5.906	9.685	3.780	3.386	1.504	2.795	1.890	185	55,317	224,976	39,625	47,317	12	M16	86	69,146
						6.102								59,743	235,100		47,898				74,641
						6.299								64,315	245,449		48,914				80,394

¹⁾ Shrink disc GT (split) delivered without screws. Tightening torques for screws quantity see table

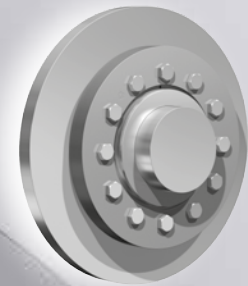
- Surface finishes
For shaft $R_a \leq 3,2 \mu\text{m}$
- Tolerances
For shaft see table page 8
- When using a hollow shaft instead of a solid shaft
please contact our Engineering-Team

Explanations to tables: Page 9

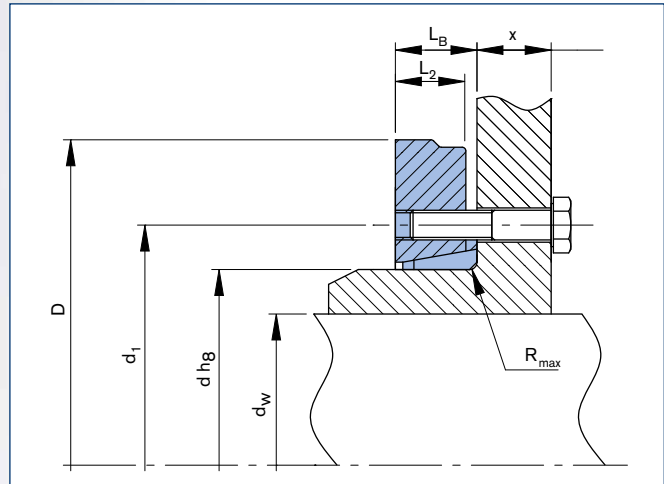
Ordering examples: RfN 4061

Series	d	D	Version
RfN 4061	7.677	13.780	-
RfN 4061	7.677	13.780	N
RfN 4061	7.677	13.780	GT
RfN 4061	7.677	13.780	GT-N

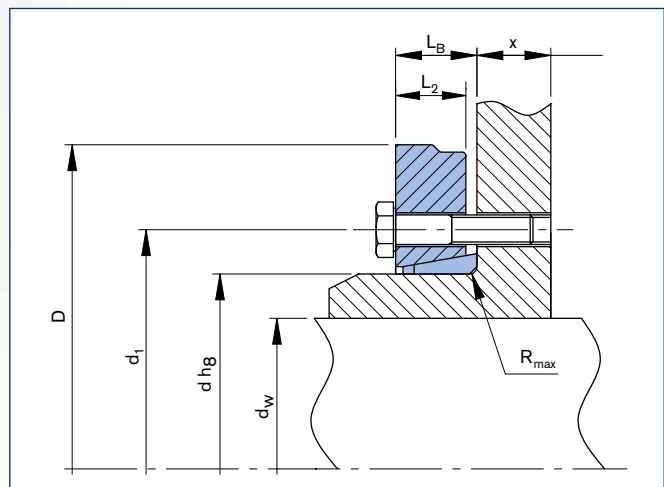
N = Nickel plated series
GT = Split
GT-N = Split-nickel plated



**OPTIONAL
NICKEL PLATED**



RINGFEDER® Shrink Disc RfN 4061 HT version



RINGFEDER® Shrink Disc RfN 4061 HC · Dimensions

Half shrink discs

Type HT (Threaded holes in thrust ring)

Type HC (Clearance holes in thrust ring)

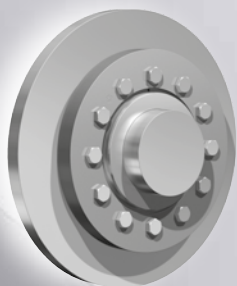
Shrink Discs dimensions										T _A ¹⁾	Transmissible torques or axial forces		Locking screws ¹⁾ ISO 4014 / 4017 - 10.9		Gw	T _{max}			
d	x	D	d	x	D	d _w	d ₁	L _B	L ₂		R	T	F _{ax}	Quantity			Thread	lbs	ft-lbs
mm			inch			inch	inch	inch	inch		inch	ft-lbs	lbs						
14	x	37	0.551	x	1.457	0.394	0.945	0.374	0.197	0.039	2	11	900	3	M4	0.1	13		
						0.433						17	1,125				17		
						0.472						26	1,687				22		
16	x	41	0.630	x	1.614	0.472	1.063	0.374	0.246	0.039	3	33	2,025	4	M5	0.1	33		
						0.512						41	2,250				41		
						0.551						33	1,800				41		
18	x	44	0.709	x	1.732	0.591	1.142	0.374	0.246	0.039	3	37	2,025	4	M5	0.2	48		
						0.630						44	2,250				48		
						0.591						41	2,250				59		
20	x	46	0.787	x	1.811	0.630	1.260	0.453	0.276	0.051	3	52	2,475	5	M5	0.2	63		
						0.669						59	2,700				74		
						0.630						74	3,487				92		
21	x	50	0.827	x	1.969	0.669	1.417	0.465	0.315	0.051	3.7	85	3,825	6	M5	0.2	107		
						0.709						96	4,162				122		
						0.748						89	3,600				111		
24	x	50	0.945	x	1.969	0.787	1.417	0.465	0.315	0.051	3.7	100	3,937	6	M5	0.2	125		
						0.827						111	4,275				144		
						0.945						129	4,275				166		
30	x	52	1.181	x	2.047	0.984	1.634	0.504	0.374	0.051	3.7	148	4,612	7	M5	0.2	184		
						1.024						162	4,837				207		
						1.220						258	6,524				328		
36	x	72	1.417	x	2.835	1.181	2.047	0.543	0.394	0.051	9	254	6,524	5	M6	0.6	317		
						1.102						218	5,962				269		
						1.142						258	6,974				328		
38	x	72	1.496	x	2.835	1.181	2.165	0.598	0.413	0.051	9	284	7,312	6	M6	0.6	358		
						1.220						288	7,087				361		
						1.181						266	6,862				332		
40	x	72	1.575	x	2.835	1.220	2.244	0.583	0.413	0.051	9	269	6,637	6	M6	0.6	336		
						1.260						291	6,974				365		
						1.260						295	7,087				369		
44	x	80	1.732	x	3.150	1.378	2.480	0.602	0.433	0.110	9	369	8,212	7	M6	0.6	461		
						1.417						387	8,549				498		
						1.575						443	8,774				572		
48	x	80	1.890	x	3.150	1.496	2.677	0.622	0.433	0.110	9	387	8,099	7	M6	0.7	498		
						1.417						332	7,312				424		
						1.654						627	11,586				793		
50	x	90	1.969	x	3.543	1.496	2.756	0.642	0.472	0.110	9	498	10,011	9	M6	0.9	608		
						1.575						553	10,799				701		
						1.890						664	10,799				848		
55	x	100	2.165	x	3.937	1.772	2.953	0.701	0.512	0.110	9	572	9,786	8	M6	1.2	719		
						1.654						479	8,774				590		
						1.890						885	14,173				1,106		
62	x	110	2.441	x	4.331	1.969	3.386	0.701	0.512	0.110	9	977	14,961	12	M6	1.4	1,217		
						2.047						1,033	15,298				1,291		
						1.969						701	10,686				867		
68	x	115	2.677	x	4.528	2.165	3.386	0.701	0.512	0.110	9	830	11,699	10	M6	1.5	1,051		
						2.362						1,051	13,611				1,328		
						2.165						977	13,611				1,217		
75	x	138	2.953	x	5.433	2.362	3.937	0.776	0.551	0.110	22	1,217	15,636	7	M8	2.5	1,530		
						2.559						1,494	17,773				1,881		
						2.362						1,180	14,173				1,475		
80	x	145	3.150	x	5.709	2.559	3.937	0.776	0.551	0.110	22	1,438	16,086	7	M8	2.6	1,807		
						2.756						1,696	17,998				2,120		
						2.362						1,789	21,260				2,231		
85	x	155	3.346	x	6.102	2.559	4.488	0.906	0.630	0.130	22	2,139	23,847	11	M8	3.6	2,674		
						2.756						2,508	26,435				3,135		

¹⁾ Shrink disc delivered without screws. Tightening torques for screws quantity see table

- Surface finishes
For shaft R_a ≤ 3,2 μm
- Tolerances
For shaft see table page 8
- When using a hollow shaft instead of a solid shaft
please contact our Engineering-Team

Explanations to tables: Page 9

To continue see next page



OPTIONAL
NICKEL PLATED

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.

Slitted 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.

Shrink Discs dimensions							Transmissible torques or axial forces		Locking screws ¹⁾ ISO 4014 / 4017 - 10.9								
d	x	D	d	x	D	d _w	d ₁	L _B	L ₂	R	T _A ¹⁾	T	F _{ax}	Quantity	Thread	Gw	T _{max}
mm		inch	inch	inch	inch	inch	inch	inch	inch	inch	ft-lbs	ft-lbs	lbs			lbs	ft-lbs
90	x	155	3.543	x	6.102	2.559	4.488	0.906	0.669	0.130	22	1,770	19,573	10	M8	3.4	2,213
						2.756						2,231	21,935				2,784
						2.953						2,692	24,185				3,374
95	x	170	3.740	x	6.693	2.559	5.000	0.925	0.748	0.130	22	1,973	21,935	12	M8	4.9	2,471
						2.756						2,489	24,410				3,116
						2.953						3,006	26,997				3,762
100	x	170	3.937	x	6.693	2.756	5.000	1.004	0.748	0.130	22	2,563	22,723	12	M8	4.7	3,208
						2.953						2,803	25,085				3,503
						3.150						3,356	27,560				4,186
110	x	185	4.331	x	7.283	2.953	5.709	1.122	0.906	0.189	45	3,006	29,134	10	M10	6.5	3,743
						3.346						4,499	33,296				5,624
						3.150						3,725	32,059				4,647
115	x	185	4.528	x	7.283	3.150	5.709	1.260	0.906	0.189	45	3,503	30,034	10	M10	6.4	4,370
						3.543						4,462	33,971				5,569
						3.740						5,181	37,009				6,472
125	x	215	4.921	x	8.465	3.346	6.299	1.260	0.906	0.189	45	4,075	33,746	12	M10	9.3	5,089
						3.543						4,831	36,784				6,030
						3.740						5,587	39,933				6,988
140	x	230	5.512	x	9.055	3.740	6.890	1.398	1.024	0.189	75	5,569	41,058	10	M12	11.4	6,952
						3.937						6,472	44,433				8,076
						4.134						7,376	47,695				9,220
165	x	290	6.496	x	11.417	4.528	8.268	1.594	1.220	0.189	185	11,580	67,605	8	M16	23.1	14,493
						4.724						14,530	71,655				16,374
						4.921						13,092	74,692				18,162
185	x	330	7.283	x	12.992	5.709	9.291	1.890	1.504	0.189	185	23,012	97,865	10	M16	38.6	28,765
						5.315						19,361	88,416				24,192
						5.512						21,150	93,140				26,423
195	x	350	7.677	x	13.780	5.906	9.685	1.890	1.504	0.189	185	28,617	116,425	12	M16	43.0	35,772
						6.102						30,885	121,600				38,611
						5.512						24,321	106,076				30,406
200	x	350	7.874	x	13.780	5.906	9.685	1.890	1.504	0.189	185	27,659	112,488	12	M16	41.9	34,573
						6.102						29,871	117,550				37,321
						6.299						32,158	122,724				40,197

¹⁾ Shrink disc delivered without screws. Tightening torques for screws quantity see table

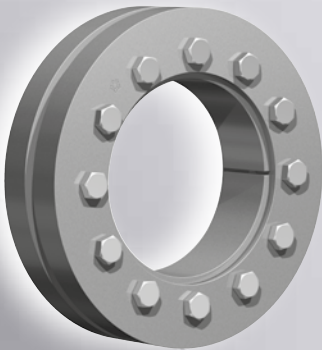
- Surface finishes
For shaft $R_a \leq 3,2 \mu\text{m}$
- Tolerances
For shaft see table page 8
- When using a hollow shaft instead of a solid shaft
please contact our Engineering-Team

Explanations to tables: Page 9

Ordering examples: RfN 4061

Series	d	D	Version
RfN 4061	4.331	7.283	HT
RfN 4061	4.331	7.283	HT-N
RfN 4061	4.331	7.283	HC
RfN 4061	4.331	7.283	HC-N

- HT = Half shrink disc with threaded holes in thrust ring
- HT-N = Half shrink disc with threaded holes in thrust ring - nickel plated
- HC = Half shrink disc with clearance holes in thrust ring
- HC-N = Half shrink disc with clearance holes in thrust ring - nickel plated



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.

Slitted 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.

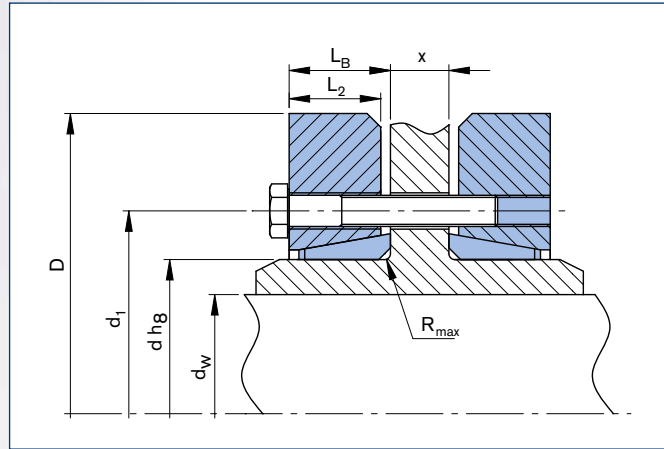
Simplified manufacture – only plain shaft and bore diameters with easily achieved surface finish and tolerances are required.

Easy replacement – the RINGFEDER® Shrink Disc is free from any form fit.

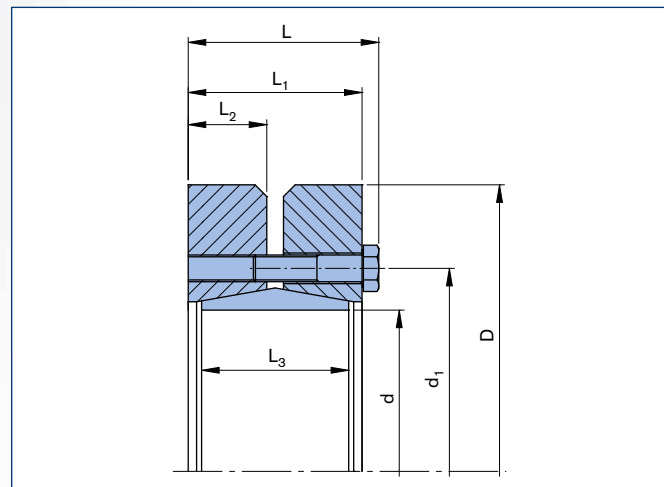
Easy mounting – no steps, keyways, splines are required, therefore hubs can be located and locked at any point or angle on the shaft. RINGFEDER® Shrink Discs use standard screws tightened with standard tools. No additional machining or fitting work is required.

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.



RINGFEDER® Shrink Disc RfN 4071 GT · Location



RINGFEDER® Shrink Disc RfN 4071 · Dimensions

Shrink Discs dimensions											Transmissible torques or axial forces				Locking screws ¹⁾ ISO 4014 / 4017 - 10.9						
d	x	D	d	x	D	d _w	d ₁	L	L ₁	L ₂	L ₃	L _B	T _A ¹⁾	T	F _{ax}	P	σ _v	Quantity	Thread	Gw	T _{max}
mm		inch	inch	inch	inch	inch	inch	inch	inch	inch	inch	inch	ft-lbs	ft-lbs	lbs	psi	psi			lbs	ft-lbs
220	x	370	8.661	x	14.567	6.299	10.630	4.488	4.094	1.850	3.465	2.343	185	70,068	267,721	35,996	42,818	15	M16	119	87,585
						6.496								75,231	278,745	35,996	43,253				94,039
						6.693								81,132	290,219	35,996	43,979				101,415
240	x	405	9.449	x	15.945	7.087	11.614	4.803	4.291	1.929	3.622	2.441	361	101,784	354,562	39,479	45,721	12	M20	148	127,229
						6.693								88,507	329,365	39,479	44,850				110,634
						7.480								115,060	376,835	39,479	48,478				143,825
260	x	430	10.236	x	16.929	8.268	12.638	5.236	4.724	2.126	4.055	2.657	361	151,200	452,202	38,028	47,753	14	M20	181	189,000
						7.874								135,711	422,955	38,028	45,576				169,639
						7.480								120,960	395,958	38,028	44,414				151,200
280	x	460	11.024	x	18.110	8.268	13.622	5.787	5.276	2.362	4.488	3.012	361	160,051	470,200	36,431	42,818	16	M20	225	200,064
						8.661								179,965	499,447	36,431	44,414				224,956
						9.055								199,142	528,694	36,431	47,027				248,927
300	x	485	11.811	x	19.094	9.646	14.331	6.102	5.591	2.520	4.803	3.130	361	232,332	593,037	35,706	45,285	18	M20	260	290,415
						9.449								217,581	577,513	35,706	43,979				271,976
						9.055								202,830	546,917	35,706	42,237				253,537
320	x	520	12.598	x	20.472	9.449	15.197	6.102	5.591	2.520	4.803	3.130	361	230,119	595,511	37,302	42,527	20	M20	289	287,649
						9.843								250,771	626,783	37,302	43,689				313,464
						10.236								275,848	652,430	37,302	46,446				344,810
340	x	570	13.386	x	22.441	9.843	16.063	6.654	6.142	2.795	5.276	3.406	361	287,649	701,700	38,318	42,818	24	M20	410	359,561
						10.236								311,620	730,947	38,318	44,560				389,525
						10.630								339,279	764,918	38,318	46,011				424,098
350	x	580	13.780	x	22.835	10.630	17.008	6.890	6.378	2.874	5.512	3.524	361	326,002	737,021	35,561	41,947	24	M20	430	407,503
						11.024								354,030	771,668	35,561	43,544				442,537
						11.220								368,781	787,416	35,561	44,560				460,976
360	x	590	14.173	x	23.228	11.024	17.008	6.890	6.378	2.874	5.512	3.524	361	341,491	744,671	34,545	40,931	24	M20	450	426,864
						11.614								385,007	795,515	34,545	43,253				481,259
						11.417								370,256	778,642	34,545	42,382				462,820
380	x	645	14.961	x	25.394	11.417	18.031	7.205	6.614	2.992	5.669	3.642	620	418,198	879,656	38,173	43,544	20	M24	527	522,747
						11.811								449,913	917,902	38,173	44,560				562,391
						12.205								485,316	955,698	38,173	46,446				606,645
390	x	660	15.354	x	25.984	11.811	18.425	7.205	6.614	2.992	5.669	3.642	620	460,239	935,900	39,189	44,269	21	M24	573	575,298
						12.205								494,904	974,146	39,189	45,576				618,630
						12.598								529,570	1,008,792	39,189	48,043				661,962
400	x	680	15.748	x	26.772	12.402	18.898	7.205	6.614	2.992	5.669	3.642	620	494,167	958,398	38,173	43,834	21	M24	617	617,708
						12.598								512,606	977,521	38,173	44,995				640,757
						12.992								548,746	1,012,392	38,173	47,027				685,933
420	x	690	16.535	x	27.165	12.992	19.843	7.992	7.402	3.386	6.457	4.193	620	575,298	1,091,134	36,431	42,818	24	M24	697	719,123
						13.386								619,552	1,133,879	36,431	44,414				774,440
						13.780								663,806	1,174,375	36,431	46,737				829,757
440	x	750	17.323	x	29.528	13.386	20.748	8.543	7.953	3.583	6.969	4.469	620	594,475	1,066,386	32,367	38,754	24	M24	899	743,094
						13.780								634,303	1,104,632	32,367	39,770				792,879
						14.173								676,344	1,145,128	32,367	41,366				845,430
460	x	770	18.110	x	30.315	14.173	21.535	8.543	7.953	3.583	6.969	4.469	620	737,562	1,275,614	35,996	42,527	28	M24	926	921,953
						14.567								789,191	1,318,359	35,996	43,689				986,489
						14.961								1,032,587	1,361,105	35,996	45,576				1,290,734
480	x	800	18.898	x	31.496	15.354	22.441	8.976	8.386	3.780	7.402	4.685	620	862,948	1,383,602	34,835	40,931	30	M24	1,113	1,078,684
						15.748								914,577	1,428,598	34,835	42,382				1,143,221
						15.748								966,206	1,473,593	34,835	44,414				1,207,758
500	x	850	19.685	x	33.465	16.142	23.228	9.055	8.386	3.780	7.402	4.685	920	967,681	1,475,843	35,125	41,221	24	M27	1,268	1,209,602
						16.142								1,017,836	1,514,088	35,125	43,108				1,272,294
						16.535								1,073,153	1,559,084	35,125	45,140				1,341,441

¹⁾ Shrink disc GT (split) delivered without screws. Tightening torques for screws quantity see table

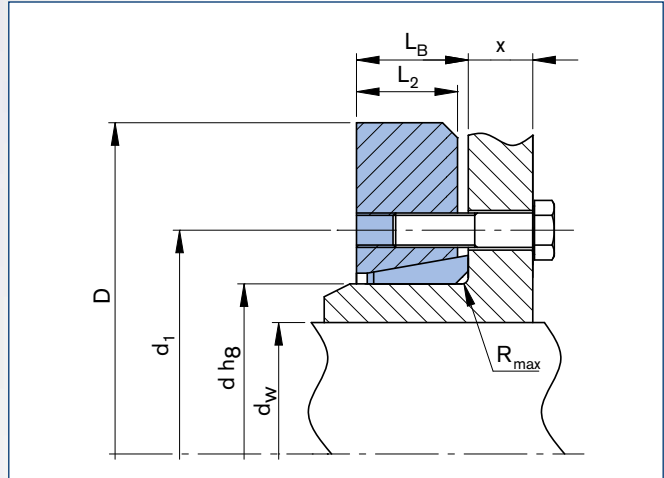
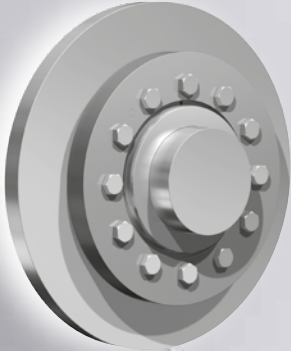
- Surface finishes For shaft $R_a \leq 3,2 \mu\text{m}$
- Tolerances For shaft see table page 8
- When using a hollow shaft instead of a solid shaft please contact our Engineering-Team

Explanations to tables: Page 9

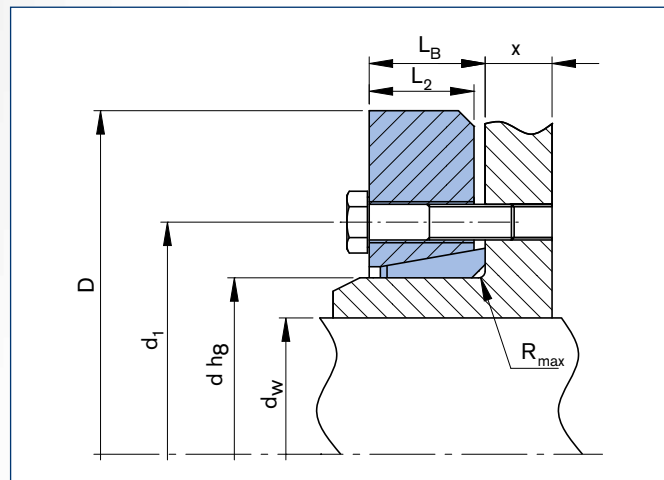
Ordering examples: RfN 4071

Series	d	D	Version
RfN 4071	15.354	25.984	-
RfN 4071	15.354	25.984	GT

GT = Split



RINGFEDER® Shrink Disc RfN 4071 HT version



RINGFEDER® Shrink Disc RfN 4071 HC · Dimensions

Half shrink discs

Type HT (Threaded holes in thrust ring)

Type HC (Clearance holes in thrust ring)

Shrink Discs dimensions									T _A ¹⁾	Transmissible torques or axial forces		Locking screws ¹⁾ ISO 4014 / 4017 - 10.9		Gw	T _{max}		
d	x	D	d	x	D	d _w	d ₁	L _B		L ₂	R	T	F _{ax}			Quantity	Thread
mm		inch	inch	inch	inch	inch	inch	inch		inch	inch	ft-lbs	lbs				
220	x	370	8.661	x	14.567	6.299	10.630	2.343	1.850	0.291	185	35,034	133,861	15	M16	60	43,793
						6.496						37,616	139,373				47,020
						6.693						40,566	145,110				50,707
240	x	405	9.449	x	15.945	7.087	11.614	2.441	1.929	0.291	361	50,892	177,281	12	M20	74	63,615
						6.693						44,254	164,682				55,317
						7.480						57,530	188,417				71,912
260	x	430	10.236	x	16.929	8.268	12.638	2.657	2.126	0.291	361	75,600	226,101	14	M20	90	94,500
						7.874						67,856	211,477				84,820
						7.480						60,480	197,979				75,600
280	x	460	11.024	x	18.110	8.268	13.622	3.012	2.362	0.331	361	80,025	235,100	16	M20	112	100,032
						8.661						89,983	249,723				112,478
						9.055						99,571	264,347				124,464
300	x	485	11.811	x	19.094	9.646	14.331	3.130	2.520	0.331	361	116,166	296,518	18	M20	130	145,208
						9.449						108,790	288,757				135,988
						9.055						101,415	273,458				126,768
320	x	520	12.598	x	20.472	9.449	15.197	3.130	2.520	0.331	361	115,060	297,756	20	M20	144	143,825
						9.843						125,386	313,392				156,732
						10.236						137,924	326,215				172,405
340	x	570	13.386	x	22.441	9.843	16.063	3.406	2.795	0.331	361	143,825	350,850	24	M20	205	179,781
						10.236						155,810	365,474				194,762
						10.630						169,639	382,459				212,049
350	x	580	13.780	x	22.835	10.630	17.008	3.524	2.874	0.331	361	163,001	368,511	24	M20	215	203,752
						11.024						177,015	385,834				221,269
						11.220						184,391	393,708				230,488
360	x	590	14.173	x	23.228	11.024	17.008	3.524	2.874	0.331	361	170,746	372,335	24	M20	225	213,432
						11.614						192,504	397,758				240,630
						11.417						185,128	389,321				231,410
380	x	645	14.961	x	25.394	11.417	18.031	3.642	2.992	0.331	620	209,099	439,828	20	M24	263	261,374
						11.811						224,956	458,951				281,196
						12.205						242,658	477,849				303,322
390	x	660	15.354	x	25.984	11.811	18.425	3.642	2.992	0.331	620	230,119	467,950	21	M24	287	287,649
						12.205						247,452	487,073				309,315
						12.598						264,785	504,396				330,981
400	x	680	15.748	x	26.772	12.402	18.898	3.642	2.992	0.331	620	247,083	479,199	21	M24	309	308,854
						12.598						256,303	488,760				320,378
						12.992						274,373	506,196				342,966
420	x	690	16.535	x	27.165	12.992	19.843	4.193	3.386	0.390	620	287,649	545,567	24	M24	348	359,561
						13.386						309,776	566,940				387,220
						13.780						331,903	587,187				414,879
440	x	750	17.323	x	29.528	13.386	20.748	4.469	3.583	0.390	620	297,237	533,193	24	M24	450	371,547
						13.780						317,152	552,316				396,440
						14.173						338,172	572,564				422,715
460	x	770	18.110	x	30.315	14.173	21.535	4.469	3.583	0.390	620	368,781	637,807	28	M24	463	460,976
						14.567						394,596	659,180				493,245
						14.961						516,293	680,552				645,367
480	x	800	18.898	x	31.496	14.961	22.441	4.685	3.780	0.390	620	431,474	691,801	30	M24	557	539,342
						15.354						457,288	714,299				571,611
						15.748						483,103	736,796				603,879
500	x	850	19.685	x	33.465	15.748	23.228	4.685	3.780	0.390	920	483,841	737,921	24	M27	634	604,801
						16.142						508,918	757,044				636,147
						16.535						536,576	779,542				670,720

¹⁾ Shrink disc delivered without screws. Tightening torques for screws quantity see table

- Surface finishes
For shaft R_a ≤ 3,2 µm
- Tolerances
For shaft see table page 8
- When using a hollow shaft instead of a solid shaft
please contact our Engineering-Team

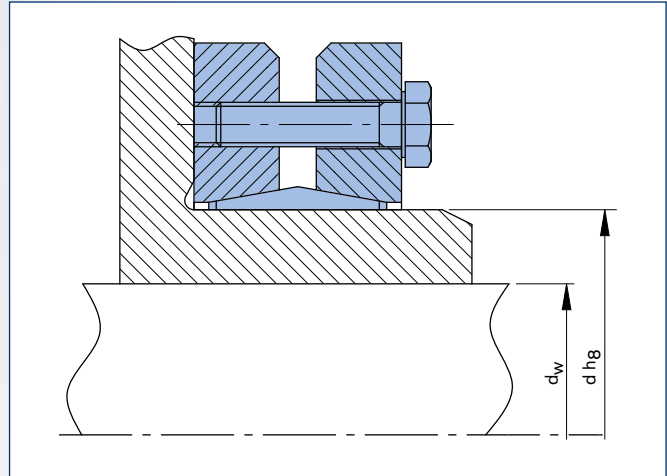
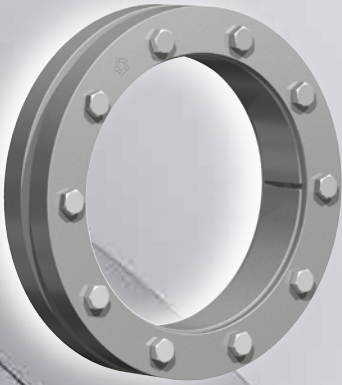
Explanations to tables: Page 9

Ordering examples: RfN 4071

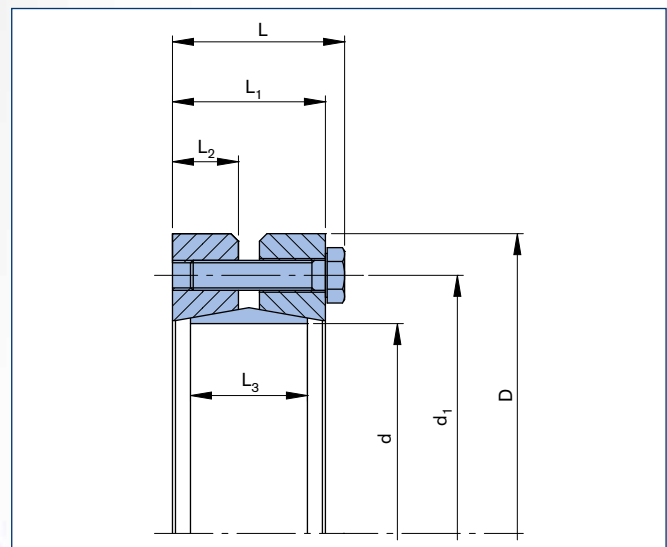
Series	d	D	Version
RfN 4071	16.535	27.165	HT
RfN 4071	16.535	27.165	HC

HT = Half shrink disc with threaded holes in thrust ring

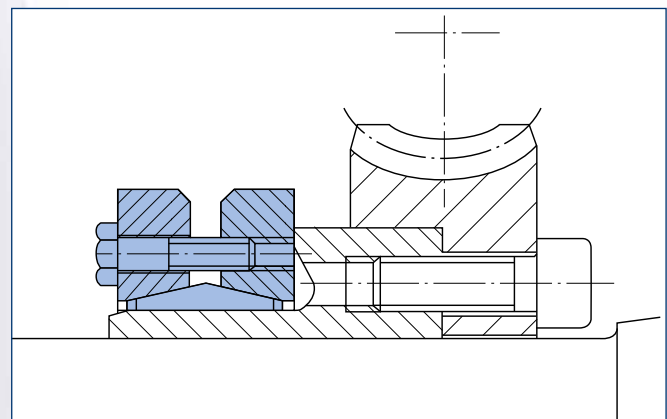
HC = Half shrink disc with clearance holes in thrust ring



RINGFEDER® Shrink Disc RfN 4073 · Location



RINGFEDER® Shrink Disc RfN 4073 · Dimensions



Example of application: Worm gear

Shrink Discs dimensions										Transmissible torques or axial forces				Locking screws ¹⁾ ISO 4014 / 4017 - 8.8						
d	x	D	d	x	D	d _w	d ₁	L	L ₁	L ₂	L ₃	T _A ¹⁾	T	F _{ax}	P	σ _v	Quantity	Thread	Gw	T _{max}
mm		inch	mm		inch	inch	inch	inch	inch	inch	inch	ft-lbs	ft-lbs	lbs	psi	psi			lbs	ft-lbs
14	x	34	0.551	x	1.339	0.354	0.945	0.551	0.472	0.197	0.354	2	7	562	32,222	56,461	3	M4*	0.22	13
						0.394							10	787		59,219				19
						0.433							15	1,035		52,397				26
16	x	42	0.630	x	1.654	0.433	1.181	0.583	0.472	0.197	0.354	2	24	1,620	38,318	59,219	4	M4*	0.22	30
						0.472							30	1,912		60,090				38
						0.512							38	2,227		63,864				47
20	x	47	0.787	x	1.850	0.551	1.339	0.689	0.551	0.236	0.394	2	30	1,642	28,013	44,995	4	M5	0.29	38
						0.591							38	1,890		45,140				47
						0.630							46	2,160		46,446				58
22	x	50	0.866	x	1.969	0.630	1.457	0.728	0.591	0.256	0.394	2	50	2,362	31,787	46,446	5	M5	0.35	63
						0.669							59	2,587		47,317				74
						0.709							69	2,925		49,494				87
24	x	50	0.945	x	1.969	0.709	1.535	0.728	0.591	0.256	0.394	4	136	5,843	39,770	73,008	5	M5	0.35	170
						0.748							151	6,293		78,814				189
						0.787							173	6,742		84,329				216
28	x	56	1.102	x	2.205	0.787	1.693	0.728	0.591	0.256	0.394	2	57	2,160	24,965	39,189	5	M5	0.40	71
						0.866							76	2,587		39,334				95
						0.945							97	3,037		41,947				122
31	x	60	1.220	x	2.362	0.945	1.811	0.728	0.591	0.256	0.394	2	81	2,475	22,643	35,415	5	M5	0.44	102
						0.984							91	2,700		35,706				114
						1.063							114	3,150		38,318				142
36	x	66	1.417	x	2.598	1.102	2.047	0.728	0.591	0.256	0.394	2	119	3,150	23,368	33,819	6	M5	0.53	148
						1.181							143	3,600		34,690				179
						1.260							159	3,712		47,608				198
40	x	68	1.575	x	2.677	1.299	2.165	0.728	0.591	0.256	0.394	3	195	4,500	28,158	47,172	6	M5	0.51	244
						1.339							214	4,724		47,753				268
						1.378							236	5,062		48,769				292
46	x	80	1.811	x	3.150	1.496	2.480	0.886	0.748	0.315	0.551	3	295	5,849	23,223	40,350	8	M5	0.97	371
						1.575							347	6,524		41,802				434
						1.654							406	7,312		47,317				504
51	x	86	2.008	x	3.386	1.654	2.697	0.886	0.748	0.315	0.551	3	325	5,849	20,901	36,141	8	M5	1.08	406
						1.732							376	6,412		37,012				472
						1.772							406	6,749		37,883				502
56	x	91	2.205	x	3.583	1.811	2.874	0.886	0.748	0.315	0.551	3	413	6,749	21,481	34,980	9	M5	1.15	509
						1.890							465	7,312		35,561				583
						1.969							524	7,874		37,447				656
61	x	96	2.402	x	3.780	2.047	3.031	0.886	0.748	0.315	0.551	3	524	7,649	21,917	41,366	10	M5	1.23	656
						2.126							597	8,324		42,237				745
						2.205							671	8,999		44,850				833
66	x	100	2.598	x	3.937	2.283	3.228	0.886	0.748	0.315	0.551	3	627	8,212	20,320	38,609	10	M5	1.26	789
						2.362							701	8,887		40,060				878
						2.441							782	9,561		44,705				974
70	x	110	2.756	x	4.331	2.441	3.543	1.083	0.945	0.394	0.709	4	1,040	12,711	22,207	40,495	10	M5	2.05	1,305
						2.520							1,151	13,611		43,544				1,438
						2.559							1,202	14,061		46,737				1,505
75	x	114	2.953	x	4.488	2.598	3.661	1.083	0.945	0.394	0.709	4	1,092	12,374	20,611	37,157	10	M5	2.05	1,357
						2.677							1,195	13,274		38,899				1,490
						2.756							1,305	14,173		43,689				1,630
80	x	120	3.150	x	4.724	2.795	3.976	1.083	0.945	0.394	0.709	4	1,475	15,748	23,368	39,044	12	M5	2.29	1,844
						2.874							1,593	16,648		41,366				1,991
						2.953							1,719	17,436		47,753				2,154
85	x	128	3.346	x	5.039	2.992	4.134	1.260	1.102	0.453	0.866	9	1,748	17,436	19,885	35,706	8	M6	3.11	2,183
						3.071							1,888	18,448		38,609				2,360
						3.150							2,036	19,348		45,866				2,545
94	x	140	3.701	x	5.512	3.228	4.685	1.260	1.102	0.453	0.866	9	1,696	15,636	17,998	36,722	8	M6	3.66	2,117
						3.346							1,918	17,098		38,028				2,397
						3.465							2,154	18,673		41,947				2,699

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

¹⁾ Shrink disc delivered without screws. Tightening torques for screws quantity see table

- Surface finishes For shaft R_a ≤ 3,2 μm
- Tolerances For shaft see table page 8
- When using a hollow shaft instead of a solid shaft please contact our Engineering-Team

Explanations to tables: Page 9

To continue see next page



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.

Slitted 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.

Shrink Discs dimensions										Transmissible torques or axial forces				Locking screws ¹⁾ ISO 4014 / 4017 - 8.8						
d	x	D	d	x	D	d _w	d ₁	L	L ₁	L ₂	L ₃	T _A ¹⁾	T	F _{ax}	P	σ _v	Quantity	Thread	Gw	T _{max}
mm			inch			inch	inch	inch	inch	inch	inch	ft-lbs	ft-lbs	lbs	psi	psi			lbs	ft-lbs
105	x	150	4.134	x	5.906	3.622	5.039	1.260	1.102	0.453	0.866	9	2,213	18,223	18,143	34,690	9	M6	3.90	2,766
						3.740							2,456	19,573		35,706				3,068
						3.858							2,714	21,035		38,609				3,393
112	x	158	4.409	x	6.220	3.937	5.315	1.260	1.102	0.453	0.866	9	2,500	19,010	16,982	32,658	9	M6	4.21	3,127
						4.094							2,840	20,810		34,980				2,633
						4.173							3,024	21,598		38,318				3,776
120	x	164	4.724	x	6.457	4.173	5.551	1.417	1.260	0.512	0.984	9	2,876	20,585	15,531	30,190	10	M6	4.85	3,592
						4.331							3,245	22,498		31,496				4,057
						4.409							3,444	23,398		33,383				4,300
130	x	172	5.118	x	6.772	4.528	5.945	1.417	1.260	0.512	0.984	9	3,135	22,273	14,369	27,723	10	M6	4.87	3,924
						4.724							3,607	22,835		29,319				4,507
						4.803							3,762	23,398		32,658				4,706
140	x	182	5.512	x	7.165	4.921	6.339	1.417	1.260	0.512	0.984	9	4,197	30,372	15,966	30,190	12	M6	5.29	5,244
						5.039							4,529	26,885		30,916				5,657
						5.118							4,757	27,897		31,932				5,945
150	x	194	5.906	x	7.638	5.315	6.732	1.417	1.260	0.512	0.984	9	4,632	26,097	14,950	28,158	12	M6	5.95	5,782
						5.433							4,964	27,222		29,029				6,210
						5.512							5,200	28,122		29,900				6,498
160	x	204	6.299	x	8.031	5.591	7.126	1.417	1.260	0.512	0.984	9	4,691	24,972	13,934	25,981	12	M6	6.17	5,856
						5.709							5,015	26,322		26,416				6,269
						5.827							5,355	27,447		27,142				6,690

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

¹⁾ Shrink disc delivered without screws. Tightening torques for screws quantity see table

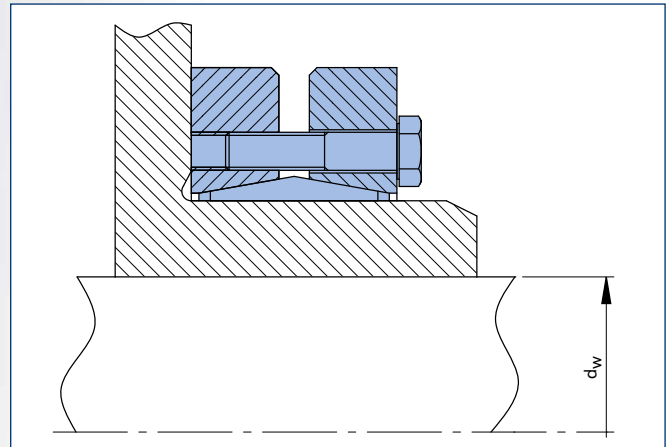
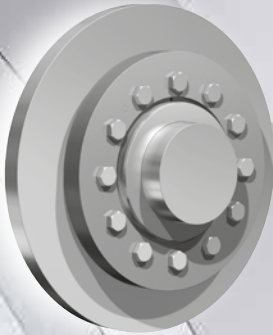
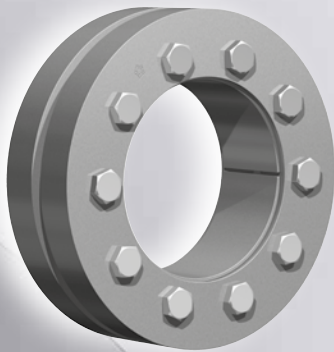
- Surface finishes
For shaft R_a ≤ 3,2 μm
- Tolerances
For shaft see table page 8
- When using a hollow shaft instead of a solid shaft
please contact our Engineering-Team

[Explanations to tables: Page 9](#)

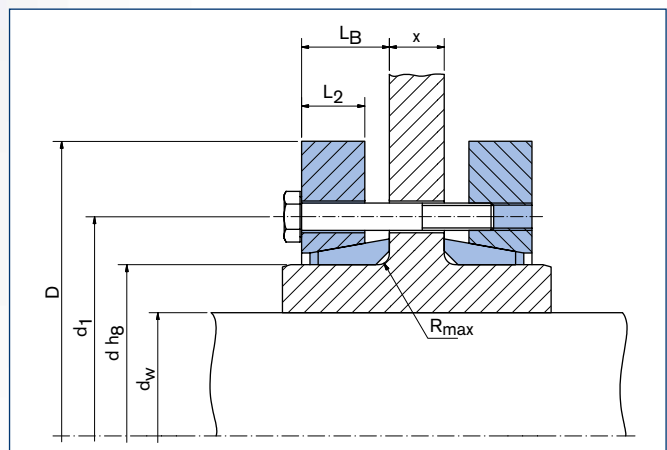
[More sizes on request](#)

Ordering example: RfN 4073

Series	d	D
RfN 4073	1.811	3.150



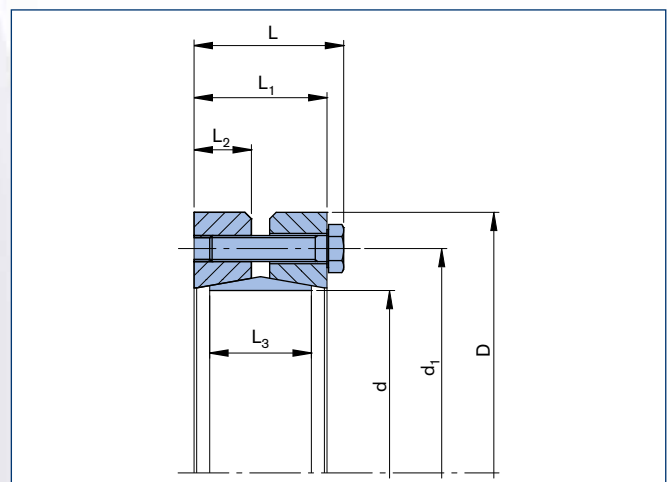
RINGFEDER® Shrink Disc RfN 4091 · Location



RINGFEDER® Shrink Disc RfN 4091 GT · Location

Shrink discs GT (split)

In the application shown above special screws according to the dimension X are required, which have to be ordered accordingly. When dimension „ X “ larger than $2 \cdot L_1$ is chosen, a reduction of the transmissible torque up to 50% has to be considered to the type GT.



RINGFEDER® Shrink Disc RfN 4091 · Dimensions

Shrink Discs dimensions											Transmissible torques or axial forces				Locking screws ¹⁾ ISO 4014 / 4017 - 10.9						
d	x	D	d	x	D	d _w	d ₁	L	L ₁	L ₂	L ₃	L _B	T _A ¹⁾	T	F _{ax}	P	σ _v	Quantity	Thread	Gw	T _{max}
mm		inch	mm		inch	inch	inch	inch	inch	inch	inch	inch	ft-lbs	ft-lbs	lbs	psi	psi			lbs	ft-lbs
50	x	95	1.969	x	3.740	1.496	2.874	1.752	1.535	0.669	1.181	0.906	18	1,328	23,847	41,366	59,509	7	M8	3.1	1,660
						1.575								1,549	25,872		64,880				1,936
						1.654								1,770	27,897		74,169				2,213
						1.772								1,991	30,372		66,331				2,489
55	x	105	2.165	x	4.134	1.654	3.071	1.752	1.535	0.669	1.181	0.906	21	1,660	27,447	42,092	58,639	7	M8	3.8	2,075
						1.890								2,360	33,296		83,313				2,950
						2.047								2,655	32,622		66,476				3,319
						1.969								2,508	31,947		58,203				3,135
62	x	115	2.441	x	4.528	1.890	3.346	1.752	1.535	0.669	1.181	0.906	22	2,176	30,147	40,060	54,575	7	M8	4.4	2,720
						1.969								2,655	33,071		48,478				3,319
						2.165								3,393	37,796		52,542				4,241
						2.362								4,204	42,745		68,944				5,255
68	x	118	2.677	x	4.646	2.559	3.661	1.929	1.732	0.748	1.339	1.063	22	5,163	56,019	37,738	78,378	8	M8	4.6	6,454
						2.362								4,204	42,745		52,542				4,241
						2.559								5,163	56,019		78,378				6,454
						2.622								5,619	61,019		83,313				7,000
75	x	145	2.953	x	5.709	2.362	4.134	2.087	1.811	0.787	1.417	1.063	45	4,204	49,720	43,834	63,428	7	M10	8.4	5,255
						2.165								3,393	43,420		58,493				4,241
						2.362								4,204	44,995		55,010				5,255
						2.559								5,163	50,845		59,945				6,454
80	x	145	3.150	x	5.709	2.756	4.134	2.087	1.811	0.787	1.417	1.063	45	6,196	56,919	41,076	74,024	7	M10	7.9	7,744
						2.559								4,942	48,820		49,204				6,177
						2.756								5,974	54,669		51,091				7,468
						2.953								7,081	60,519		57,332				8,851
90	x	160	3.543	x	6.299	2.756	4.567	2.244	1.969	0.866	1.575	1.142	45	6,491	59,619	37,593	48,478	8	M10	10.6	8,113
						2.953								7,376	65,918		49,640				9,220
						3.150								8,998	72,217		53,413				11,248
						2.953								8,113	69,293		45,866				10,141
100	x	170	3.937	x	6.693	2.953	4.961	2.402	2.126	0.906	1.732	1.260	45	7,376	65,918	38,463	48,478	10	M10	12.3	9,220
						3.150								8,998	72,217		53,413				11,248
						2.953								8,113	69,293		45,866				10,141
						3.346								10,842	79,192		52,252				13,553
110	x	185	4.331	x	7.283	3.346	5.433	2.638	2.362	1.024	1.969	1.378	45	11,063	79,866	36,867	48,043	12	M10	16.8	13,829
						3.543								12,907	87,291		48,043				16,134
						3.740								14,751	94,940		48,914				18,439
						3.740								15,931	102,589		47,753				19,914
125	x	215	4.921	x	8.465	3.543	6.299	2.874	2.559	1.102	2.165	1.476	75	13,866	94,490	35,996	47,898	10	M12	24.3	16,595
						4.134								20,504	119,462		49,059				25,630
						4.331								24,657	126,574		68,218				33,332
						4.331								27,069	183,805		61,396				33,817
135	x	212	5.315	x	8.346	4.134	6.772	3.346	3.031	1.260	2.362	1.772	75	43,295	246,574	36,431	68,218	12	M12	23.6	54,100
						4.331								34,665	211,927		62,848				43,332
						4.331								37,069	183,805		61,396				33,817
						4.134								21,316	123,962		44,995				26,626
140	x	300	5.512	x	11.811	3.937	8.661	4.173	3.780	1.654	3.150	2.126	185	23,897	132,736	52,252	45,140	12	M16	78.3	43,332
						3.543								34,665	211,927		62,848				43,332
						4.134								37,069	183,805		61,396				33,817
						4.134								21,316	123,962		44,995				26,626
155	x	263	6.102	x	10.354	4.331	7.756	3.602	3.307	1.378	2.598	1.772	75	23,897	132,736	35,996	45,140	15	M12	43.2	29,871
						4.528								26,700	141,735		45,576				33,375
						4.921								37,394	183,355		49,930				46,743
						4.921								33,928	176,606		47,608				42,410
165	x	290	6.496	x	11.417	4.528	8.268	3.858	3.465	1.496	2.835	1.929	185	30,240	166,482	39,189	47,027	10	M16	57.3	37,800
						4.921								53,695	262,097		53,268				67,118
						4.921								58,931	276,720		54,284				73,646
						5.118								64,389	291,119		56,026				80,468
175	x	300	6.890	x	11.811	5.315	8.661	4.882	4.488	1.969	3.622	2.323	185	53,104	247,474	43,689	47,462	15	M16	80.5	66,381
						5.315								57,530	258,722		48,478				71,912
						5.315								63,430	269,971		50,075				79,288
						5.315								70,142	316,991		56,026				87,659
185	x	330	7.283	x	12.992	5.512	9.291	4.803	4.409	1.969	3.622	2.402	185	76,264	332,515	48,043	56,897	14	M16	104	95,330
						5.709								96,326	379,085		63,864				120,407
						5.512								55,317	241,849		44,995				69,146
						5.906								64,905	265,472		46,301				81,132
195	x	350	7.677	x	13.780	6.102	9.685	4.803	4.409	1.969	3.622	2.500	185	70,806	277,845	36,286	47,898	14	M16	117	88,507
						5.709								62,693	263,222		46,011				78,366
						5.906								68,224	276,720		46,737				85,281
						6.102								73,756	290,219		47,898				92,195
200	x	350	7.874	x	13.780	5.906	9.685	4.803	4.409	1.969	3.622	2.500	185	68,224	276,720	37,883	46,737	15	M16	110	85,281
						6.102								73,756	290,219		47,898				92,195

¹⁾ Shrink disc GT (split) delivered without screws. Tightening torques for screws quantity see table

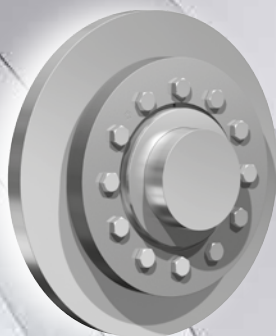
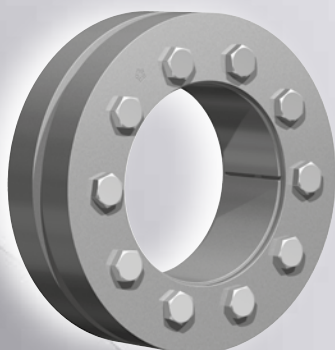
■ Surface finishes
For shaft R_a ≤ 3,2 μm

■ Tolerances
For shaft see table page 8

Explanations to tables: Page 9

To continue see next page

■ When using a hollow shaft instead of a solid shaft
please contact our Engineering-Team



Characteristics

Heavy design – for highest transmission values.

Slitted 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.

Shrink Discs dimensions												Transmissible torques or axial forces				Locking screws ¹⁾ ISO 4014 / 4017 - 10.9					
d	x	D	d	x	D	d _w	d ₁	L	L ₁	L ₂	L ₃	L _B	T _A ¹⁾	T	F _{ax}	P	σ _v	Quantity	Thread	G _w	T _{max}
mm		inch	mm		inch	inch	inch	inch	inch	inch	inch	inch	ft-lbs	ft-lbs	lbs	psi	psi			lbs	ft-lbs
220	x	370	8.661	x	14.567	6.496	10.630	5.669	5.276	2.362	4.488	2.933	185	100,308	371,210	37,012	45,866	20	M16	143	125,386
						6.299								93,670	357,712		44,850				117,088
						6.693								108,053	386,959		47,172				135,066
						7.480								146,037	467,950		49,494				182,547
240	x	405	9.449	x	15.945	7.087	11.614	6.181	5.669	2.559	4.724	3.130	361	129,811	440,953	37,883	45,721	15	M20	192	162,264
						6.693								114,322	409,456		44,269				142,903
						7.480								157,101	508,446		44,705				196,376
260	x	430	10.236	x	16.929	7.874	12.638	6.811	6.299	2.835	5.354	3.445	361	177,015	544,442	37,012	46,737	18	M20	220	221,269
						8.268								197,667	580,438		50,220				247,083
						9.055								261,835	695,176		51,672				327,293
280	x	460	11.024	x	18.110	8.661	13.622	7.283	6.772	3.071	5.827	3.780	361	236,020	654,680	36,867	47,462	21	M20	291	295,025
						8.268								210,205	616,434		44,995				262,756
						9.055								251,509	665,929		43,253				314,386
300	x	485	11.811	x	19.094	9.449	14.331	7.441	6.929	3.150	5.984	3.858	361	277,323	704,175	35,125	45,866	22	M20	309	346,654
						9.646								290,599	723,298		47,462				363,249
						9.449								278,798	708,674		40,931				348,498
320	x	520	12.598	x	20.472	9.843	15.197	7.736	7.244	3.228	6.299	4.016	361	306,088	748,045	34,109	42,673	24	M20	364	382,610
						10.236								332,640	780,667		46,156				415,801
						9.843								361,037	879,656		42,818				451,296
340	x	570	13.386	x	22.441	10.236	16.535	8.465	7.874	3.622	6.929	4.331	620	390,908	916,777	36,722	44,995	21	M24	529	488,635
						10.630								426,311	961,772		47,317				532,889
						10.630								410,084	927,351		44,124				512,606
350	x	580	13.780	x	22.835	11.024	16.732	8.465	7.874	3.622	6.929	4.331	620	445,487	971,896	35,851	46,446	21	M24	545	556,859
						11.220								463,926	993,269		48,043				579,908
						11.024								451,388	983,145		43,979				564,235
360	x	590	14.173	x	23.228	11.417	17.008	8.622	8.031	3.622	7.087	4.508	620	489,004	1,028,140	35,561	46,446	22	M24	551	611,255
						11.614								508,180	1,050,638		48,188				635,225
						11.811								492,691	1,002,268		42,092				615,864
380	x	645	14.961	x	25.394	11.417	18.031	8.622	8.031	3.622	7.087	4.508	620	455,813	960,648	33,819	40,495	22	M24	705	569,767
						12.205								530,307	1,045,014		44,560				662,884
						12.598								600,744	1,145,128		46,156				750,930
390	x	660	15.354	x	25.984	12.205	18.425	8.937	8.346	3.780	7.402	4.665	620	562,022	1,104,632	34,254	43,108	24	M24	772	702,528
						11.811								522,194	1,060,762		41,221				652,742
						12.402								564,235	1,092,258		41,366				705,294
400	x	680	15.748	x	26.772	12.598	18.898	8.937	8.346	3.780	7.402	4.665	620	581,199	1,108,457	33,528	42,673	24	M24	816	726,499
						12.992								623,240	1,153,002		45,285				779,050
						12.992								736,824	1,362,230		43,834				921,031
420	x	690	16.535	x	27.165	13.780	19.843	9.961	9.370	4.370	8.425	5.177	620	840,821	1,465,719	34,980	49,640	30	M24	904	1,051,026
						13.386								787,716	1,413,974		46,156				984,645
						13.386								780,341	1,401,600		41,076				975,426
440	x	750	17.323	x	29.528	13.780	20.748	10.591	9.921	4.528	8.819	5.453	920	833,445	1,453,345	33,528	42,818	24	M27	1,190	1,041,806
						14.173								888,025	1,505,089		45,285				1,110,031
						14.173								973,582	1,673,821		45,285				1,216,977
460	x	770	18.110	x	30.315	14.567	21.535	10.591	9.921	4.528	8.819	5.551	920	1,047,338	1,732,315	37,302	47,317	28	M27	1,190	1,309,173
						14.961								1,106,343	1,788,559		50,220				1,382,929
						14.961								1,132,158	1,817,806		43,834				1,415,197
480	x	800	18.898	x	31.496	15.354	22.835	11.457	10.787	5.039	9.685	5.984	920	1,199,276	1,876,300	34,980	46,156	30	M27	1,433	1,499,095
						15.748								1,268,607	1,934,794		49,349				1,585,758
						15.748								1,290,734	1,968,540		44,850				1,613,417
500	x	850	19.685	x	33.465	16.142	23.622	11.457	10.787	5.039	9.685	5.984	920	1,357,114	2,020,284	35,706	47,608	32	M27	1,653	1,696,393
						16.535								1,430,870	2,081,028		50,801				1,788,588

¹⁾ Shrink disc GT (split) delivered without screws. Tightening torques for screws quantity see table

- Surface finishes
For shaft R_a ≤ 3,2 μm
- Tolerances
For shaft see table page 8
- When using a hollow shaft instead of a solid shaft
please contact our Engineering-Team

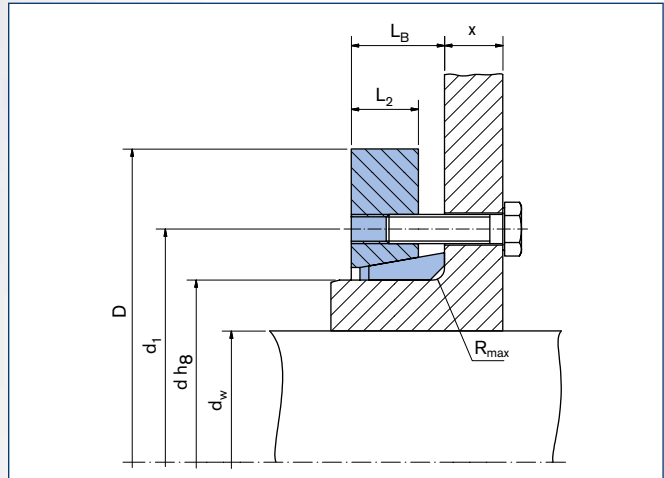
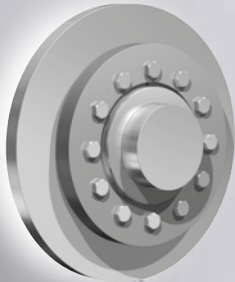
Explanations to tables: Page 9

More sizes on request

Ordering examples: RfN 4091

Series	d	D	Version
RfN 4091	8.661	14.567	-
RfN 4091	8.661	14.567	GT

GT = Split

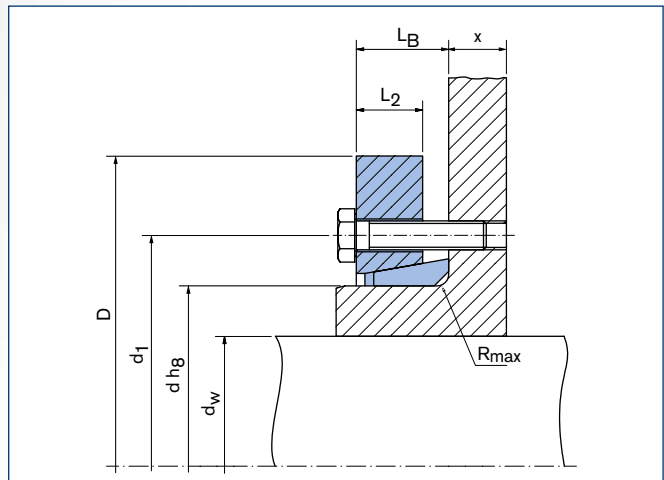


RINGFEDER® Shrink Disc RfN 4091 HT

Half shrink discs

Type HT (Threaded holes in thrust ring)

Type HC (Clearance holes in thrust ring)



RINGFEDER® Shrink Disc RfN 4091 HC · Dimensions

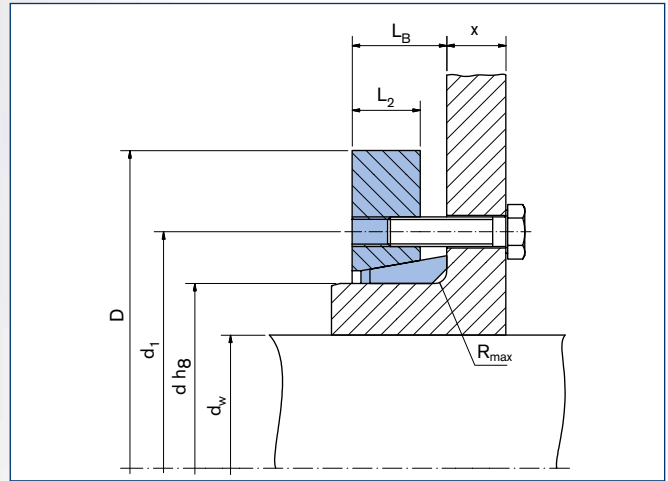
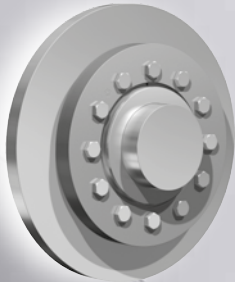
Shrink Discs dimensions							T _A ¹⁾	Transmissible torques or axial forces		Locking screws ¹⁾ ISO 4014 / 4017 - 10.9		G _w	T _{max}						
d	x	D	d	x	D	d _w		d ₁	L _B	L ₂	R			T	F _{ax}	Quantity	Thread	lbs	ft-lbs
mm			inch			inch		inch	inch	inch	inch			ft-lbs	lbs				
50	x	95	1.969	x	3.740	1.575	2.874	0.906	0.669	0.071	18	774	12,936	7	M8	1.54	968		
						1.654						885	13,949				1,106		
						1.496						664	11,924				830		
55	x	105	2.165	x	4.134	1.654	3.071	0.906	0.669	0.071	21	830	13,724	7	M8	1.87	1,037		
						1.772						996	15,186				1,245		
						1.890						1,180	16,648				1,475		
62	x	115	2.441	x	4.528	1.890	3.346	0.906	0.669	0.071	22	1,088	15,073	7	M8	2.20	1,360		
						1.969						1,254	15,973				1,567		
						2.047						1,328	16,311				1,660		
68	x	118	2.677	x	4.646	1.969	3.661	1.063	0.748	0.110	22	1,328	16,536	8	M8	2.31	1,660		
						2.165						1,696	18,898				2,120		
						2.362						2,102	21,373				2,628		
75	x	145	2.953	x	5.709	2.165	4.134	1.063	0.787	0.110	45	1,586	21,710	7	M10	4.19	2,120		
						2.362						2,102	24,860				2,628		
						2.559						2,581	28,010				3,227		
80	x	145	3.150	x	5.709	2.362	4.134	1.063	0.787	0.110	45	2,102	22,498	7	M10	3.97	2,628		
						2.559						2,581	25,422				3,227		
						2.756						3,098	28,459				3,872		
90	x	160	3.543	x	6.299	2.559	4.567	1.142	0.866	0.110	45	2,471	24,410	8	M10	5.29	3,089		
						2.756						2,987	27,335				3,734		
						2.953						3,540	30,259				4,425		
100	x	170	3.937	x	6.693	2.756	4.961	1.260	0.906	0.130	45	3,245	29,809	10	M10	6.17	4,057		
						2.953						3,688	32,959				4,610		
						3.150						4,499	36,109				5,624		
110	x	185	4.331	x	7.283	2.953	5.433	1.378	1.024	0.130	45	4,057	34,646	12	M10	8.38	5,071		
						3.150						4,757	38,021				5,947		
						3.346						5,421	39,596				6,776		
125	x	215	4.921	x	8.465	3.543	6.299	1.476	1.102	0.130	75	6,454	43,645	10	M12	12.1	8,067		
						3.740						7,376	47,470				9,220		
						3.946						5,532	39,933				6,915		
135	x	212	5.315	x	8.346	3.543	6.772	1.772	1.260	0.189	75	6,933	47,245	12	M12	11.6	8,298		
						3.740						7,966	51,295				9,957		
						4.134						10,252	59,731				12,815		
140	x	300	5.512	x	11.811	3.543	8.661	2.126	1.654	0.189	185	13,534	91,903	12	M16	38.6	18,347		
						3.937						17,333	105,964				23,556		
						4.331						21,647	123,287				29,318		
155	x	263	6.102	x	10.354	4.134	7.795	1.772	1.378	0.189	75	9,957	61,418	15	M12	21.5	12,446		
						4.331						11,432	65,805				14,290		
						4.528						12,539	70,193				15,673		
165	x	290	6.496	x	11.417	4.528	8.268	1.929	1.496	0.189	185	15,120	83,241	10	M16	28.7	18,900		
						4.724						16,964	88,303				21,205		
						4.921						18,697	91,678				23,371		
175	x	300	6.890	x	11.811	4.921	8.661	2.323	1.969	0.189	185	26,847	131,049	10	M16	32.0	33,559		
						5.118						29,466	138,360				36,823		
						5.315						32,195	145,559				40,234		
185	x	330	7.283	x	12.992	5.315	9.291	2.402	1.969	0.189	185	26,552	123,737	14	M16	51.8	33,190		
						5.512						28,765	129,361				35,956		
						5.709						31,715	134,986				39,644		
190	x	350	7.480	x	13.780	5.315	9.409	2.441	1.969	0.189	350	35,071	158,496	12	M20	57.3	43,830		
						5.512						38,132	166,257				47,665		
						6.102						48,163	189,542				60,203		
195	x	350	7.677	x	13.780	5.512	9.685	2.500	1.969	0.189	185	27,659	120,925	14	M16	58.4	34,573		
						5.906						32,453	132,736				40,566		
						6.102						35,403	138,923				44,254		

¹⁾ Shrink disc delivered without screws. Tightening torques for screws quantity see table

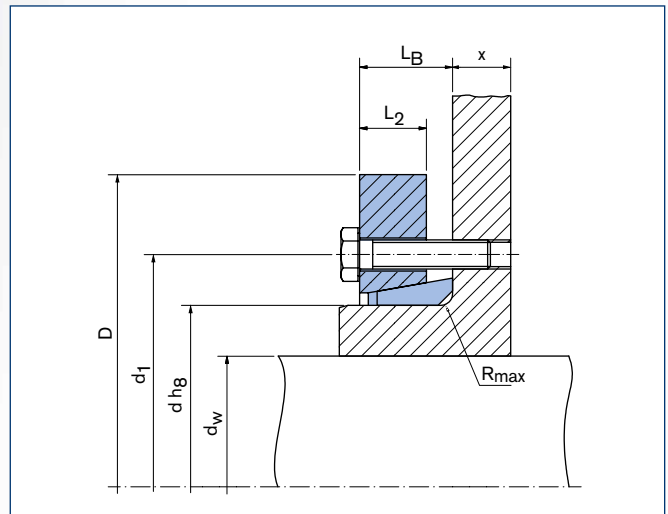
- Surface finishes
For shaft R_a ≤ 3,2 μm
- Tolerances
For shaft see table page 8
- When using a hollow shaft instead of a solid shaft
please contact our Engineering-Team

Explanations to tables: Page 9

To continue see next page



RINGFEDER® Shrink Disc RfN 4091 HT



RINGFEDER® Shrink Disc RfN 4091 HC · Dimensions

Shrink Discs dimensions											Transmissible torques or axial forces		Locking screws ¹⁾ ISO 4014 / 4017 - 10.9				
d	x	D	d	x	D	d _w	d ₁	L _B	L ₂	R	T _A ¹⁾	T	F _{ax}	Quantity	Thread	G _w	T _{max}
mm		inch	inch	inch	inch	inch	inch	inch	inch	inch	ft-lbs	ft-lbs	lbs			lbs	ft-lbs
200	x	350	7.874	x	13.780	5.906	9.685	2.500	1.969	0.189	185	34,112	138,360	15	M16	55.1	42,640
						6.102						36,878	145,110				46,098
						5.709						31,346	131,611				39,183
220	x	370	8.661	x	14.567	6.299	10.630	2.933	2.362	0.252	185	46,835	178,856	20	M16	71.7	58,544
						6.496						50,154	185,605				62,693
						6.693						54,026	193,479				67,533
240	x	405	9.449	x	15.945	6.693	11.614	3.130	2.559	0.252	361	57,161	204,728	15	M20	96.0	71,451
						7.087						64,905	220,476				81,132
						7.480						73,019	233,975				91,273
260	x	430	10.236	x	16.929	7.480	12.638	3.445	2.835	0.252	361	78,550	254,223	18	M20	110	98,188
						7.874						88,507	272,221				110,634
						8.268						98,833	290,219				123,542
280	x	460	11.024	x	18.110	8.268	13.622	3.780	3.071	0.331	361	105,103	308,217	21	M20	146	131,378
						8.661						118,010	327,340				147,512
						9.055						130,917	347,588				163,647
300	x	485	11.811	x	19.094	9.055	14.331	3.858	3.150	0.331	361	125,754	332,964	22	M20	154	157,193
						9.449						138,662	352,087				173,327
						9.646						145,300	361,649				181,625
320	x	520	12.598	x	20.472	9.449	15.197	4.016	3.228	0.331	361	139,399	354,337	24	M20	182	174,323
						9.843						153,044	374,023				191,305
						10.236						166,320	390,333				207,900
340	x	570	13.386	x	22.441	9.843	16.535	4.331	3.622	0.331	620	180,518	439,828	21	M24	265	225,648
						10.236						195,454	458,389				244,317
						10.630						213,155	480,886				266,444
350	x	580	13.780	x	22.835	10.630	16.732	4.331	3.622	0.331	620	205,042	463,676	21	M24	272	256,303
						11.024						222,744	485,948				278,430
						11.220						231,963	496,635				289,954
360	x	590	14.173	x	23.228	11.417	17.008	4.508	3.622	0.390	620	244,502	514,070	22	M24	276	305,627
						11.614						254,090	525,319				317,613
						11.024						225,694	491,573				282,117
380	x	645	14.961	x	25.394	11.417	18.031	4.508	3.622	0.390	620	227,907	480,324	22	M24	353	284,883
						11.811						246,346	501,134				307,932
						12.205						265,154	522,507				331,442
390	x	660	15.354	x	25.984	11.811	18.425	4.665	3.780	0.390	620	261,097	530,381	24	M24	386	326,371
						12.205						281,011	552,316				351,264
						12.598						300,372	572,564				375,465
400	x	680	15.748	x	26.772	12.402	18.898	4.665	3.780	0.390	620	282,117	546,129	24	M24	408	352,647
						12.598						290,599	554,228				363,249
						12.992						311,620	576,501				389,525
420	x	690	16.535	x	27.165	12.992	19.843	5.177	4.370	0.390	620	368,412	681,115	30	M24	452	460,515
						13.386						393,858	706,987				492,323
						13.780						420,410	732,859				525,513
440	x	750	17.323	x	29.528	13.386	20.748	5.453	4.528	0.390	920	390,170	700,800	24	M27	595	487,713
						13.780						416,723	726,672				520,903
						14.173						444,012	752,545				555,015
460	x	770	18.110	x	30.315	14.173	21.535	5.551	4.528	0.488	920	486,791	836,911	28	M27	595	608,489
						14.567						523,669	866,158				654,586
						14.961						553,172	894,280				691,464
480	x	800	18.898	x	31.496	14.961	22.835	5.984	5.039	0.488	920	566,079	908,903	30	M27	717	707,599
						15.354						599,638	938,150				749,547
						15.748						634,303	967,397				792,879
500	x	850	19.685	x	33.465	15.748	23.622	5.984	5.039	0.488	920	645,367	984,270	32	M27	827	806,708
						16.142						678,557	1,010,142				848,196
						16.535						715,435	1,040,514				894,294

¹⁾ Shrink disc delivered without screws. Tightening torques for screws quantity see table

■ Surface finishes
For shaft $R_a \leq 3,2 \mu\text{m}$

■ Tolerances
For shaft see table page 8

Explanations to tables: Page 9

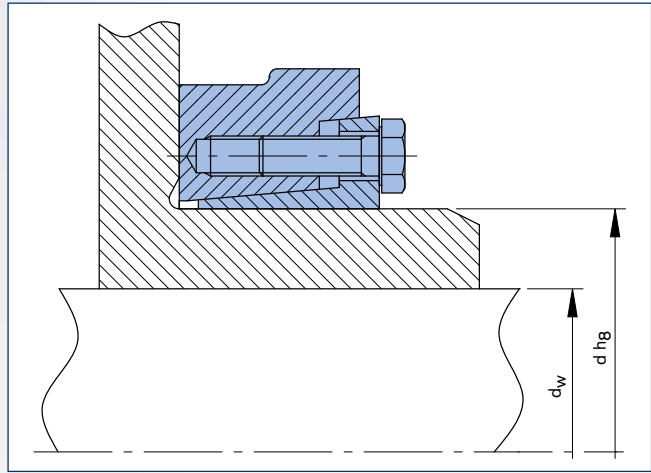
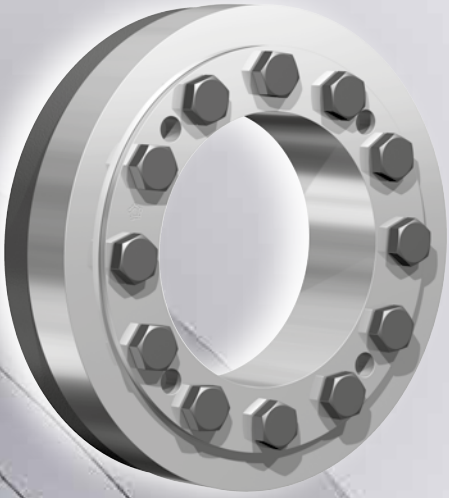
■ When using a hollow shaft instead of a solid shaft please contact our Engineering-Team

Ordering examples: RfN 4091

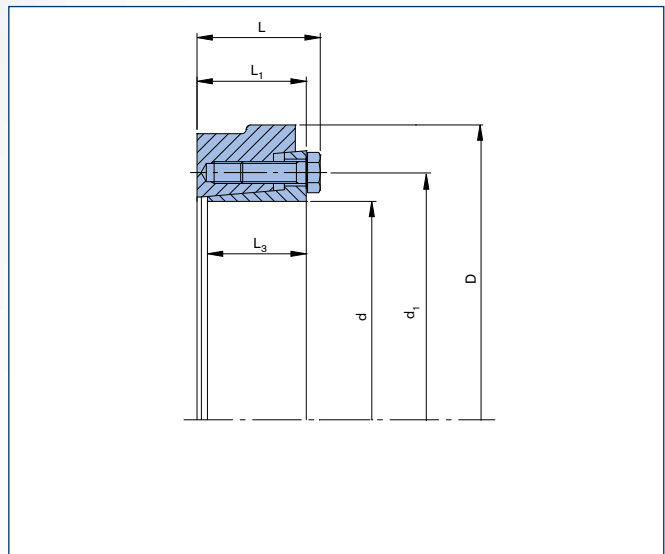
Series	d	D	Version
RfN 4091	18.110	30.315	HT
RfN 4091	18.110	30.315	HC

HT = Half shrink disc with threaded holes in thrust ring

HC = Half shrink disc with clearance holes in thrust ring



RINGFEDER® Shrink Disc RfN 4161 · Location



RINGFEDER® Shrink Disc RfN 4161 · Dimensions

Shrink Discs dimensions										Transmissible torques or axial forces			Locking screws ISO 4014 / 4017 - 12.9			
d	x	D	d	x	D	d _w	d ₁	L	L ₁	L ₃	T _A	T	F _{ax}	Thread	G _w	T _{max}
mm			inch			inch		inch			ft-lbs	ft-lbs	lbs		lbs	ft-lbs
18	x	44	0.709	x	1.732	0.591	1.181	0.748	0.591	0.512	9	59	2,473	M6	0.44	65
						0.630	1.181			0.512		81	3,147			89
						--	--			--		--	--			--
20	x	47	0.787	x	1.850	0.669	1.260	0.768	0.610	0.531	9	111	4,047	M6	0.44	122
						0.709	1.260			0.531		133	4,496			146
						--	--			--		--	--			--
24	x	50	0.945	x	1.969	0.748	1.417	0.866	0.709	0.591	9	118	3,822	M6	0.44	130
						0.787	1.417			0.591		155	4,496			170
						0.866	1.417			0.591		207	5,620			227
26	x	51.5	1.024	x	2.028	0.787	1.496	0.866	0.709	0.630	9	170	5,171	M6	0.44	187
						0.866	1.496			0.630		221	6,070			243
						0.945	1.496			0.630		229	6,519			252
30	x	60	1.181	x	2.362	0.945	1.732	0.945	0.787	0.669	9	199	5,171	M6	0.66	219
						0.984	1.732			0.669		236	5,620			260
						1.024	1.732			0.669		266	6,295			292
36	x	72	1.417	x	2.835	1.063	2.047	1.083	0.866	0.728	26	376	8,318	M8	1.10	414
						1.181	2.047			0.728		524	10,566			576
						1.299	2.047			0.728		701	13,039			771
38	x	72	1.496	x	2.835	1.299	2.126	1.083	0.866	0.728	26	634	11,690	M8	1.10	698
						1.063	2.126			0.728		354	8,093			389
						1.181	2.126			0.728		479	9,667			527
40	x	80	1.575	x	3.150	1.339	2.402	1.161	0.945	0.807	26	597	10,791	M8	1.54	657
						1.378	2.402			0.807		649	11,240			714
						1.457	2.402			0.807		708	11,690			779
44	x	80	1.732	x	3.150	1.378	2.402	1.161	0.945	0.807	26	590	11,690	M8	1.32	649
						1.417	2.402			0.807		656	12,814			722
						1.457	2.402			0.807		774	13,489			852
50	x	90	1.969	x	3.543	1.496	2.677	1.240	1.024	0.866	26	1,106	17,760	M8	1.76	1,217
						1.575	2.677			0.866		1,254	19,558			1,379
						1.654	2.677			0.866		1,475	21,132			1,623
55	x	100	2.165	x	3.937	1.654	2.835	1.358	1.142	0.984	26	1,180	17,535	M8	2.42	1,298
						1.772	2.835			0.984		1,475	19,783			1,623
						1.890	2.835			0.984		1,770	22,256			1,947
60	x	110	2.362	x	4.331	2.047	3.150	1.358	1.142	0.965	26	1,991	23,605	M8	2.87	2,191
						1.890	3.150			0.965		1,623	20,682			1,785
						1.969	3.150			0.965		1,844	22,031			2,028
62	x	110	2.441	x	4.331	1.890	3.150	1.358	1.142	0.965	26	1,623	20,682	M8	2.87	1,785
						1.969	3.150			0.965		1,844	22,031			2,028
						2.047	3.150			0.965		1,991	23,605			2,191
68	x	115	2.677	x	4.528	1.969	3.386	1.358	1.142	0.965	26	1,770	21,132	M8	3.09	1,947
						2.165	3.386			0.965		2,213	24,954			2,434
						2.362	3.386			0.965		2,803	28,776			3,083
75	x	138	2.953	x	5.433	2.165	3.937	1.476	1.220	1.035	52	2,729	30,349	M10	5.07	3,002
						2.362	3.937			1.035		3,467	35,070			3,813
						2.559	3.937			1.035		4,278	39,791			4,706
80	x	141	3.150	x	5.551	2.362	4.094	1.476	1.220	1.024	52	3,098	31,698	M10	5.07	3,408
						2.559	4.094			1.024		3,835	35,969			4,219
						2.756	4.094			1.024		4,647	40,466			5,111
85	x	155	3.346	x	6.102	2.559	4.488	1.752	1.496	1.339	52	4,352	41,814	M10	7.72	4,787
						2.756	4.488			1.339		5,310	45,861			5,841
						2.953	4.488			1.339		6,269	51,032			6,896
90	x	155	3.543	x	6.102	2.559	4.488	1.752	1.496	1.299	52	4,352	40,915	M10	7.72	4,787
						2.756	4.488			1.299		5,310	45,861			5,841
						2.953	4.488			1.299		6,269	51,032			6,896
95	x	170	3.740	x	6.693	2.756	4.882	1.949	1.693	1.476	52	5,458	47,884	M10	11.0	6,004
						2.953	4.882			1.476		6,564	53,055			7,221
						3.150	4.882			1.476		7,671	58,450			8,438
100	x	185	3.937	x	7.283	3.150	5.472	2.224	1.929	1.693	90	11,063	83,179	M12	14.8	12,170
						3.346	5.472			1.693		12,760	89,924			14,036
						3.543	5.472			1.693		14,456	96,668			15,902

■ Surface finishes
For shaft $R_a \leq 3,2 \mu\text{m}$

■ Tolerances
For shaft see table page 8

■ When using a hollow shaft instead of a solid shaft
please contact our Engineering-Team

■ Hub with yield strength $R_{p0,2} \geq 360 \text{ N/mm}^2$

Explanations to tables: Page 9

To continue see next page



Characteristics

Standard design – for high transmission values.

Slitted 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.

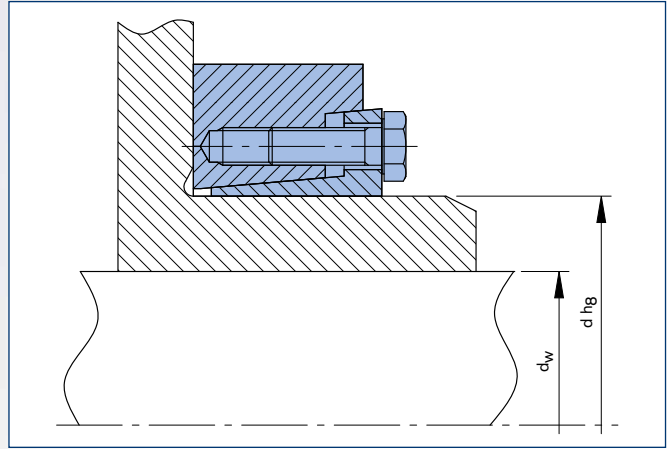
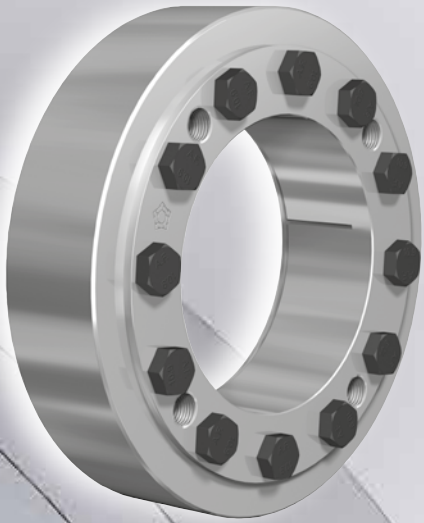
Shrink Discs dimensions										Transmissible torques or axial forces			Locking screws ISO 4014 / 4017 - 12.9			
d	x	D	d	x	D	d _w	d ₁	L	L ₁	L ₃	T _A	T	F _{ax}	Thread	Gw	T _{max}
mm		inch		inch		inch			ft-lbs	ft-lbs	lbs		lbs	ft-lbs		
105	x	185	4.134	x	7.283	3.543	5.472	2.224	1.929	1.693	90	13,719	97,567	M12	14.1	15,091
						3.150	5.472			1.693		10,252	78,233			11,277
						3.346	5.472			1.693		11,875	85,427			13,062
110	x	185	4.331	x	7.283	3.150	5.472	2.224	1.929	1.693	90	11,432	85,427	M12	13.5	12,575
						3.346	5.472			1.693		13,129	92,172			14,441
						3.543	5.472			1.693		14,751	98,916			16,226
115	x	200	4.528	x	7.874	3.346	5.906	2.461	2.165	1.890	90	12,686	91,048	M12	17.6	13,955
						3.543	5.906			1.890		14,677	99,590			16,145
						3.740	5.906			1.890		16,890	108,358			18,579
120	x	200	4.724	x	7.874	3.346	5.906	2.461	2.165	1.890	90	12,686	91,048	M12	17.0	13,955
						3.543	5.906			1.890		14,677	99,590			16,145
						3.740	5.906			1.890		16,890	108,358			18,579
125	x	215	4.921	x	8.465	3.543	6.181	2.382	2.087	1.831	90	14,161	94,420	M12	19.6	15,577
						3.740	6.181			1.831		16,005	101,164			17,606
						3.937	6.181			1.831		17,997	107,908			19,796
130	x	230	5.118	x	9.055	4.331	6.772	2.579	2.283	2.008	90	26,552	146,126	M12	25.4	28,470
						3.740	6.772			2.008		19,103	121,397			21,013
						3.937	6.772			2.008		21,389	130,389			23,528
135	x	230	5.315	x	9.055	3.740	6.772	2.638	2.283	2.008	140	15,821	101,614	M14	24.5	17,403
						3.937	6.772			2.008		17,923	109,257			19,715
						4.331	6.772			2.008		22,496	124,769			24,708
140	x	230	5.512	x	9.055	3.937	6.772	2.638	2.283	2.008	140	18,660	112,404	M14	23.6	20,526
						4.134	6.772			2.008		20,652	119,149			22,717
						4.528	6.772			2.008		26,257	137,133			28,883
150	x	263	5.906	x	10.354	4.331	7.480	2.795	2.441	2.165	140	27,290	151,296	M14	35.9	30,019
						4.724	7.480			2.165		33,412	169,506			36,753
						4.921	7.480			2.165		36,657	178,723			40,323
155	x	263	6.102	x	10.354	4.331	7.480	2.795	2.441	2.165	140	24,340	134,885	M14	34.8	26,774
						4.528	7.480			2.165		26,995	143,203			29,694
						4.724	7.480			2.165		29,871	151,521			32,858
160	x	290	6.299	x	11.417	5.315	7.874	3.071	2.677	2.402	215	53,473	240,546	M16	49.2	58,821
						4.724	7.874			2.402		42,262	213,568			46,489
						5.118	7.874			2.402		49,195	229,305			54,115
165	x	290	6.496	x	11.417	5.315	7.874	3.071	2.677	2.402	215	53,473	240,546	M16	47.8	58,821
						4.921	7.874			2.402		45,360	220,313			49,896
						4.724	7.874			2.402		41,672	211,320			45,839
170	x	300	6.693	x	11.811	5.709	8.268	3.083	2.689	2.402	215	57,825	243,018	M16	49.2	63,607
						5.118	8.268			2.402		44,991	210,871			49,490
						5.512	8.268			2.402		53,326	229,980			58,658
175	x	300	6.890	x	11.811	5.512	8.268	3.083	2.689	2.402	215	53,473	231,553	M16	47.8	58,821
						5.118	8.268			2.402		45,360	202,328			49,896
						5.315	8.268			2.402		49,417	222,561			54,358
180	x	320	7.087	x	12.598	6.102	8.819	3.819	3.386	3.051	215	80,616	314,957	M16	75.0	88,677
						5.906	8.819			3.051		74,789	303,942			82,268
						5.512	8.819			3.051		63,799	278,089			70,179
185	x	320	7.283	x	12.598	5.512	8.819	3.819	3.386	3.051	215	70,806	281,011	M16	73.0	77,887
						5.709	8.819			3.051		76,706	303,492			84,377
						6.102	8.819			3.051		88,507	348,454			97,358
190	x	340	7.480	x	13.386	6.299	9.370	3.764	3.370	3.031	215	83,713	314,732	M16	79.2	92,085
						5.906	9.370			3.031		67,856	281,011			74,641
						6.102	9.370			3.031		73,019	292,252			80,321
195	x	340	7.677	x	13.386	6.299	9.370	3.764	3.370	3.031	215	87,991	335,190	M16	77.2	96,790
						6.496	9.370			3.031		93,007	343,733			102,307
						5.906	9.370			3.031		75,969	308,887			83,566
200	x	340	7.874	x	13.386	5.906	9.370	3.768	3.374	3.031	215	79,657	325,973	M16	75.0	87,622
						6.102	9.370			3.031		85,557	337,213			94,113
						6.299	9.370			3.031		91,458	348,454			100,603

- Surface finishes
For shaft R_a ≤ 3,2 µm
- Tolerances
For shaft see table page 8
- When using a hollow shaft instead of a solid shaft
please contact our Engineering-Team
- Hub with yield strength Rp0,2 ≥ 360 N/mm²

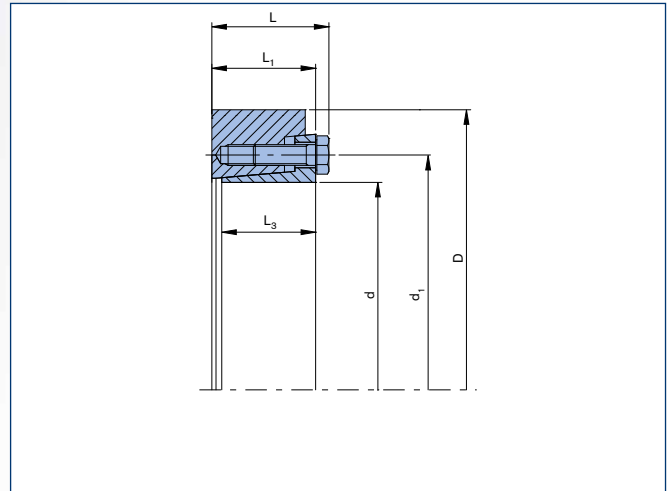
Explanations to tables: Page 9

Ordering example: RfN 4161

Series	d	D
RfN 4161	5.906	10.354



RINGFEDER® Shrink Disc RfN 4181 · Location



RINGFEDER® Shrink Disc RfN 4181 · Dimensions

Shrink Discs dimensions										Transmissible torques or axial forces			Locking screws ISO 4014 / 4017 - 12.9		
d	x	D	d	x	D	d _w	L	L ₁	L ₃	T _A	T	F _{ax}	Thread	Gw	T _{max}
mm			inch			inch	inch			ft-lbs	ft-lbs	lbs		lbs	ft-lbs
220	x	370	8.661	x	14.567	6.299	4.567	4.055	3.425	428	118,010	449,952	M20	117	129,811
						6.693			3.425		134,236	483,698			147,660
						7.087			3.425		151,938	517,445			167,132
240	x	405	9.449	x	15.945	6.693	4.803	4.291	3.622	428	140,137	506,196	M20	148	154,150
						7.087			3.622		158,576	539,942			174,433
						7.874			3.622		198,404	697,435			218,245
260	x	430	10.236	x	16.929	7.480	5.079	4.567	4.016	428	182,178	584,938	M20	171	200,396
						7.874			4.016		204,305	618,684			224,735
						8.661			4.016		250,771	697,426			275,848
280	x	460	11.024	x	18.110	8.268	5.276	4.764	4.606	428	207,992	604,286	M20	219	228,792
						8.661			4.606		230,857	640,057			253,943
						9.449			4.606		280,274	712,499			308,301
300	x	485	11.811	x	19.094	8.661	6.181	5.591	4.803	725	283,961	787,416	M24	263	312,358
						9.055			4.803		313,464	832,411			344,810
						9.843			4.803		372,469	911,153			409,716
320	x	520	12.598	x	20.472	9.449	6.165	5.575	4.882	725	327,478	832,411	M24	291	360,225
						9.843			4.882		359,930	878,306			395,923
						10.630			4.882		427,786	966,497			470,565
340	x	570	13.386	x	22.441	9.843	6.693	6.102	5.315	725	415,985	1,012,392	M24	411	457,583
						10.236			5.315		451,388	1,057,387			496,527
						11.024			5.315		530,307	1,158,826			583,338
350	x	580	13.780	x	22.835	10.630	7.008	6.417	5.512	725	435,162	983,145	M24	417	478,678
						11.024			5.512		479,415	1,044,564			527,357
						11.417			5.512		516,293	1,086,184			567,923
360	x	590	14.173	x	23.228	10.630	6.732	6.142	5.236	725	485,316	1,091,134	M24	428	533,847
						11.024			5.236		525,144	1,147,378			577,659
						11.811			5.236		608,489	1,237,368			669,338
380	x	640	14.961	x	25.197	11.417	7.283	6.614	5.827	1,070	542,108	1,140,403	M27	546	596,319
						11.811			5.827		582,674	1,184,724			640,941
						12.205			5.827		623,240	1,226,569			685,564
390	x	650	15.354	x	25.591	11.417	7.323	6.614	5.669	1,400	666,018	1,406,100	M30	570	732,620
						11.811			5.669		715,435	1,451,095			786,979
						12.598			5.669		818,694	1,563,583			900,563
400	x	660	15.748	x	25.984	11.811	7.992	7.323	6.614	1,070	590,050	1,199,797	M27	697	649,055
						12.205			6.614		641,679	1,262,790			705,847
						12.598			6.614		663,806	1,265,490			730,186
420	x	670	16.535	x	26.378	12.598	8.071	7.323	6.535	1,400	714,698	1,362,455	M30	655	786,167
						12.992			6.535		765,589	1,415,324			842,148
						13.780			6.535		872,536	1,521,288			959,789
440	x	740	17.323	x	29.134	13.386	8.386	7.638	7.126	1,400	893,925	1,603,854	M30	848	983,318
						13.780			7.126		952,930	1,660,998			1,048,223
						14.567			7.126		1,076,841	1,775,511			1,184,525
460	x	770	18.110	x	30.315	14.173	8.780	7.953	6.772	1,070	1,129,945	1,914,771	M27	1,047	1,242,939
						14.567			6.772		1,199,276	1,977,314			1,319,203
						15.354			6.772		1,346,788	2,106,675			1,481,467
480	x	800	18.898	x	31.496	14.961	9.173	8.425	7.402	1,400	1,343,838	2,157,295	M30	1,092	1,478,222
						15.354			7.402		1,422,757	2,225,463			1,565,033
						16.142			7.402		1,586,496	2,360,673			1,745,145
500	x	850	19.685	x	33.465	15.748	9.213	8.465	7.480	1,400	1,530,441	2,334,126	M30	1,381	1,683,485
						16.142			7.480		1,615,998	2,404,543			1,777,598
						16.929			7.480		1,793,751	2,544,929			1,973,126
520	x	850	20.472	x	33.465	16.535	9.803	9.094	7.795	1,400	1,375,553	1,998,012	M30	1,420	1,512,740
						16.929			7.795		1,408,006	1,997,562			1,548,880
						17.323			7.795		1,475,124	2,045,032			1,622,636
530	x	850	20.866	x	33.465	16.929	10.236	9.449	8.110	1,400	1,767,936	2,508,482	M30	1,440	1,944,730
						17.323			8.110		1,859,040	2,577,550			2,044,944
						18.110			8.110		2,048,517	2,716,810			2,253,369

- Surface finishes
For shaft $R_a \leq 3,2 \mu\text{m}$
- Tolerances
For shaft see table page 8
- When using a hollow shaft instead of a solid shaft
please contact our Engineering-Team
- Hub with yield strength $R_{p0,2} \geq 360 \text{ N/mm}^2$

Explanations to tables: Page 9
To continue see next page

Ordering example: RfN 4181

Series	d	D
RfN 4181	10.236	16.929

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.

Shrink Discs dimensions									T _A	Transmissible torques or axial forces		Locking screws ISO 4014 / 4017 - 12.9		T _{max}	
d	x	D	d	x	D	d _w	L	L ₁		L ₃	T	F _{ax}	Thread		G _w
mm			inch			inch	inch				ft-lbs	lbs			lbs
540	x	910	17.323	x	35.827	17.717	10.276	9.528	8.386	1,400	1,445,622	M30	1,765	1,792,276	
			18.110			8.386			1,519,378		2,058,530			1,880,783	
			17.717			8.386			1,593,134		2,114,774			1,976,666	
560	x	940	17.717	x	37.008	18.110	10.236	9.449	8.110	1,400	1,877,095	M30	1,651	2,064,805	
			18.898			8.110			1,969,295		2,611,746			2,166,224	
			18.110			8.110			2,160,703		2,746,057			2,376,774	
580	x	960	18.110	x	37.795	18.504	10.984	10.236	8.976	1,400	2,141,880	M30	2,068	2,356,511	
			18.898			8.976			2,189,084		3,128,516			2,408,140	
			18.504			8.976			2,291,605		2,912,314			2,520,987	
590	x	960	18.504	x	37.795	18.898	14.961	14.213	11.260	1,400	2,959,099	M30	2,588	3,255,009	
			19.685			11.260			3,097,161		3,936,405			3,406,877	
			19.685			11.260			3,383,229		4,127,860			3,721,551	
620	x	970	19.685	x	38.189	20.472	11.969	11.220	9.606	1,400	2,509,186	M30	1,955	2,760,105	
			20.472			9.606			2,734,880		3,208,383			3,008,368	
			21.260			9.606			2,970,900		3,356,192			3,267,990	
640	x	1040	20.472	x	40.945	21.260	12.874	12.047	10.827	1,990	2,816,749	M33	2,795	3,097,760	
			22.047			10.827			2,924,433		3,304,447			3,217,245	
			20.866			10.827			3,033,593		3,304,447			3,336,730	
660	x	1040	20.866	x	40.945	21.654	16.457	15.591	12.205	2,580	4,246,882	M36	3,193	4,671,570	
			22.441			12.205			4,600,100		5,102,456			5,060,110	
			22.047			12.205			4,968,158		5,317,308			5,464,973	
700	x	1140	22.047	x	44.882	22.835	12.402	11.575	10.236	1,990	3,332,821	M33	3,235	3,666,104	
			23.622			10.236			3,599,303		3,785,896			3,959,233	
			23.622			10.236			3,878,101		3,943,154			4,265,911	
750	x	1150	23.622	x	45.276	24.409	13.386	16.850	14.173	2,580	5,656,363	M36	4,073	6,221,999	
			25.197			14.173			6,069,134		5,971,763			6,676,048	
			25.591			14.173			6,716,900		6,304,052			7,388,589	
800	x	1230	25.197	x	48.425	25.984	14.685	13.858	11.654	1,990	5,087,673	M33	4,176	5,596,440	
			25.984			11.654			5,441,732		5,030,013			5,985,906	
			27.559			11.654			6,188,514		5,393,350			6,807,365	

- Surface finishes
For shaft $R_a \leq 3,2 \mu\text{m}$
- Tolerances
For shaft see table page 8
- When using a hollow shaft instead of a solid shaft
please contact our Engineering-Team
- Hub with yield strength $Rp0,2 \geq 360 \text{ N/mm}^2$

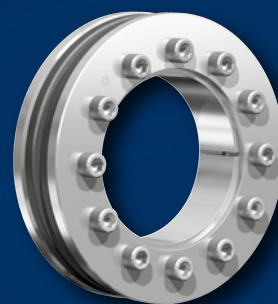
Explanations to tables: Page 9
More sizes on request

Ordering example: RfN 4181

Series	d	D
RfN 4181	10.236	16.929

STAINLESS STEEL

Shrink Discs



RfN 4061
Standard Series,
stainless steel



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.

Slitted 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.

Explanations to tables

Basic dimensions when screws are not tightened

d	=	Inner diameter
D	=	Outer diameter
d _w	=	Solid shaft diameter
d ₁	=	Pitch circle diameter
L	=	Overall length
L ₁	=	Overall length without screws
L ₂	=	Thrust ring width
L ₃	=	Width of ring
T _A	=	Max. tightened torque of the screws
T	=	Transmissible torque at given T _A
F _{ax}	=	Transmissible axial force
G _w	=	Weight
P	=	Hub surface pressure
σ _v	=	Equivalent stress in the hub
n _{Sc}	=	Quantity of screws
T _{max}	=	Max. transmissible torque
σ _v	=	Calculated combined stress in the hub extension (d/d _w) under consideration of the tangential, radial and torsional stresses following the equation:

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

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

Function values

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

The locking screws are lubricated using MoS₂ (μ_{tot} = 0,1).

The tapered cones are lubricated using MoS₂ (μ = 0,05).

The contact surfaces (d_w) are in lightly oiled condition with coefficient of friction μ = 0,12.

The hub and shaft materials have a modulus of elasticity of 210,000 N/mm². (Lower values result in increased values for T and F_{ax} with reduced tangential stress.)

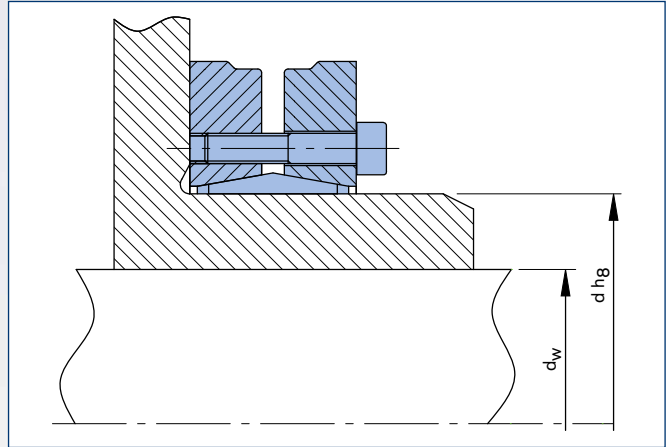
The maximum clearance S is being fully utilized.

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

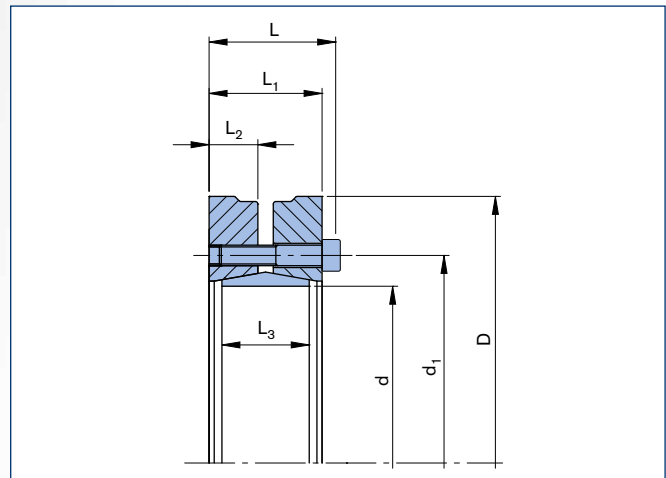
In cases where the assumed conditions do not apply then contact our Technical Department where we will be happy to assist you with your application.



STAINLESS STEEL



RINGFEDER® Shrink Disc RfN 4061 stainless steel · Location



RINGFEDER® Shrink Disc RfN 4061 stainless steel · Dimensions

Shrink Discs dimensions									Transmissible torques or axial forces					High-strength special screws ISO 4762							
d	x	D	d	x	D	d _w	d ₁	L	L ₁	L ₂	L ₃	T _A	T	F _{ax}	P	σ _v	Quantity	Thread	Gw	T _{max}	
mm		inch	inch					inch				ft-lbs	ft-lbs	lbs	psi	psi			lbs	ft-lbs	
14	x	37	0.551	x	1.457	0.394	0.945	0.583	0.472	0.197	0.354	2	22	1,800	40,350	60,235	3	M4	0.2	28	
						0.433	0.945						27	1,800						68,799	34
						0.472	0.945						35	2,250						80,846	44
16	x	41	0.630	x	1.614	0.472	1.063	0.728	0.591	0.246	0.472	3	52	3,375	48,769	73,879	4	M5	0.2	66	
						0.512	1.063						66	4,050						83,458	81
						0.551	1.063						81	4,500						112,342	96
18	x	44	0.709	x	1.732	0.551	1.142	0.728	0.591	0.246	0.472	3	66	3,600	43,398	66,622	4	M5	0.4	81	
						0.591	1.142						74	4,050						75,911	96
						0.630	1.142						89	4,500						102,327	118
20	x	46	0.787	x	1.811	0.591	1.260	0.827	0.689	0.276	0.472	3	81	4,500	48,769	67,057	5	M5	0.4	103	
						0.630	1.260						103	4,949						72,137	125
						0.669	1.260						118	5,399						84,184	148
21	x	50	0.827	x	1.969	0.630	1.417	0.886	0.748	0.315	0.591	4	148	6,974	55,736	77,507	6	M5	0.4	184	
						0.669	1.417						170	7,649						87,377	214
						0.709	1.417						192	8,324						108,278	243
24	x	50	0.945	x	1.969	0.748	1.417	0.886	0.748	0.315	0.591	4	177	7,199	48,769	71,847	6	M5	0.4	221	
						0.787	1.417						199	7,874						80,410	251
						0.827	1.417						221	8,549						98,553	288
30	x	60	1.181	x	2.362	0.945	1.634	1.024	0.886	0.374	0.709	4	258	8,549	37,883	56,607	7	M5	0.4	332	
						0.984	1.634						295	9,224						61,832	369
						1.024	1.634						325	9,674						71,411	413
36	x	72	1.417	x	2.835	1.102	2.047	1.083	0.925	0.394	0.709	9	435	11,924	43,979	56,607	5	M6	1.1	538	
						1.181	2.047						509	13,049						63,574	634
						1.220	2.047						516	13,049						77,798	656
38	x	72	1.496	x	2.835	1.142	2.165	1.181	1.024	0.413	0.827	9	516	13,949	42,818	54,865	6	M6	1.1	656	
						1.181	2.165						568	14,623						57,187	715
						1.220	2.165						575	14,173						68,799	723
40	x	72	1.575	x	2.835	1.181	2.244	1.122	0.965	0.413	0.748	9	531	13,724	44,995	54,429	6	M6	1.1	664	
						1.220	2.244						538	13,274						65,315	671
						1.260	2.244						583	13,949						66,767	730
44	x	80	1.732	x	3.150	1.260	2.480	1.181	1.024	0.433	0.787	9	590	14,173	45,285	62,267	7	M6	1.1	738	
						1.378	2.480						738	16,423						64,444	922
						1.417	2.480						774	17,098						66,476	996
48	x	80	1.890	x	3.150	1.417	2.677	1.181	1.024	0.433	0.866	9	664	14,623	37,738	53,849	7	M6	1.3	848	
						1.496	2.677						774	16,198						55,155	996
						1.575	2.677						885	17,548						58,493	1,143
50	x	90	1.969	x	3.543	1.496	2.756	1.240	1.083	0.472	0.886	9	996	20,023	45,576	60,671	9	M6	2.0	1,217	
						1.575	2.756						1,106	21,598						62,848	1,401
						1.654	2.756						1,254	23,173						67,783	1,586
55	x	100	2.165	x	3.937	1.654	2.953	1.358	1.201	0.512	0.906	9	959	17,548	35,996	49,785	8	M6	2.4	1,180	
						1.772	2.953						1,143	19,573						52,107	1,438
						1.890	2.953						1,328	21,598						59,509	1,696
62	x	110	2.441	x	4.331	1.890	3.386	1.358	1.201	0.512	0.906	9	1,770	28,347	47,898	59,074	12	M6	2.9	2,213	
						1.969	3.386						1,955	29,922						60,816	2,434
						2.047	3.386						2,065	30,597						69,960	2,581
68	x	115	2.677	x	4.528	1.969	3.386	1.358	1.201	0.512	0.925	9	1,401	21,373	35,561	45,576	10	M6	3.1	1,733	
						2.165	3.386						1,660	23,398						53,268	2,102
						2.362	3.386						2,102	27,222						59,655	2,655
75	x	138	2.953	x	5.433	2.165	3.937	1.488	1.280	0.551	0.984	22	1,955	27,222	40,205	54,720	7	M8	5.1	2,434	
						2.362	3.937						2,434	31,272						60,380	3,061
						2.559	3.937						2,987	35,546						60,380	3,762
80	x	145	3.150	x	5.709	2.362	3.937	1.488	1.280	0.551	0.984	22	2,360	28,347	37,593	51,236	7	M8	5.5	2,950	
						2.559	3.937						2,876	32,172						51,962	3,614
						2.756	3.937						3,393	35,996						56,897	4,241

- Surface finishes
For shaft R_a ≤ 3,2 μm
- Tolerances
For shaft see table page 8
- When using a hollow shaft instead of a solid shaft
please contact our Engineering-Team

Explanations to tables: Page 63 To continue see next page

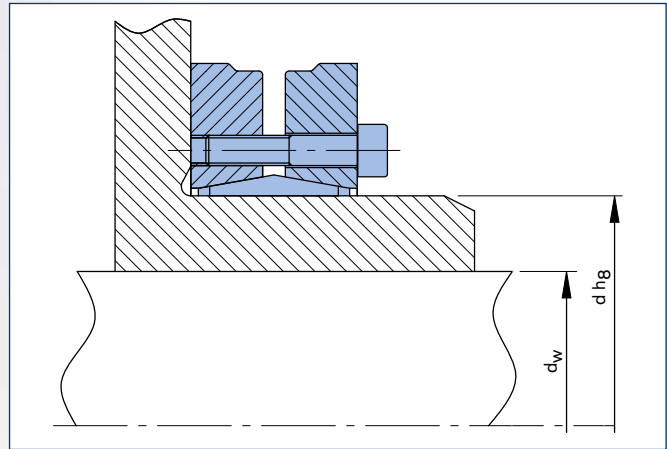
Ordering example: RfN 4061

Series	d	D	Version
RfN 4061	2.953	5.433	SST

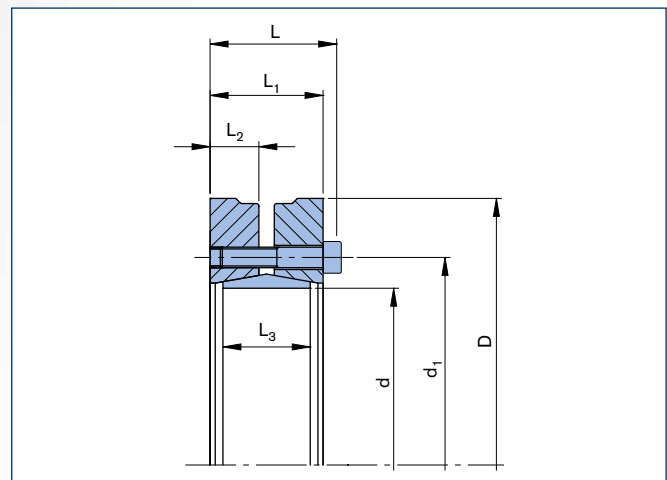
SST = Stainless steel



STAINLESS STEEL



RINGFEDER® Shrink Disc RfN 4061 stainless steel · Location



RINGFEDER® Shrink Disc RfN 4061 stainless steel · Dimensions

Shrink Discs dimensions									Transmissible torques or axial forces					High-strength special screws ISO 4762								
d	x	D	d	x	D	d _w	d ₁	L	L ₁	L ₂	L ₃	T _A	T	F _{ax}	P	σ _v	Quantity	Thread	Gw	T _{max}		
mm		inch	inch					inch				ft-lbs	ft-lbs	lbs	psi	psi			lbs	ft-lbs		
85	x	155	3.346	x	6.102	2.362	4.488	1.803	1.594	0.630	1.181	22	3,577	42,520	47,172	59,074	58,639	11	M8	7.7	4,462	
						2.559	4.488						4,278	47,695							61,977	5,347
						2.756	4.488						5,015	52,869							62,669	6,269
90	x	155	3.543	x	6.102	2.559	4.488	1.752	1.535	0.669	1.181	22	3,540	39,146	39,770	51,236	50,656	10	M8	7.3	4,425	
						2.756	4.488						4,462	43,870							51,672	5,569
						2.953	4.488						5,384	48,370							53,994	6,749
95	x	170	3.740	x	6.693	2.559	5.000	2.067	1.858	0.748	1.339	22	3,946	43,870	39,915	50,656	50,656	12	M8	10.4	4,942	
						2.756	5.000						4,979	48,820							50,656	6,232
						2.953	5.000						6,011	53,994							51,526	7,523
100	x	170	3.937	x	6.693	2.756	5.000	2.067	1.858	0.748	1.339	22	5,126	45,445	37,883	48,043	48,043	12	M8	9.9	6,417	
						2.953	5.000						5,605	50,170							48,043	7,007
						3.150	5.000						6,712	55,119							49,059	8,371
110	x	185	4.331	x	7.283	2.953	5.709	2.339	2.087	0.906	1.654	44	6,011	58,269	36,867	45,866	45,866	10	M10	13.9	7,486	
						3.150	5.709						7,449	64,118							51,817	9,293
						3.346	5.709						8,998	66,593							51,817	11,248
115	x	185	4.528	x	7.283	3.150	5.709	2.457	2.205	0.906	1.654	44	7,007	60,069	35,270	43,834	43,834	10	M10	13.4	8,740	
						3.543	5.709						8,925	67,943							49,640	11,137
						3.740	5.709						10,363	74,017							51,236	12,944
125	x	215	4.921	x	8.465	3.346	6.299	2.378	2.126	0.906	1.654	44	8,150	67,493	39,044	51,381	51,381	12	M10	19.2	10,178	
						3.543	6.299						9,662	73,567							51,091	12,059
						3.740	6.299						11,174	79,866							51,091	13,977
140	x	230	5.512	x	9.055	3.740	6.890	2.677	2.382	1.024	1.811	74	11,137	82,116	38,173	48,769	48,769	10	M12	23.4	13,903	
						3.937	6.890						12,944	88,866							48,624	16,153
						4.134	6.890						14,751	95,390							48,624	18,439
165	x	290	6.496	x	11.417	4.528	8.268	3.189	2.795	1.220	2.205	184	23,159	135,211	40,641	48,478	48,478	8	M16	47.8	28,986	
						4.724	8.268						26,183	143,310							48,624	32,748
						4.921	8.268						29,060	149,384							50,510	36,325
185	x	330	7.283	x	12.992	5.315	9.291	3.795	3.402	1.504	2.795	184	38,722	176,831	35,706	44,560	44,560	10	M16	79.4	48,384	
						5.512	9.291						42,299	186,280							44,995	52,846
						5.709	9.291						46,024	195,729							45,576	57,530
195	x	350	7.677	x	13.780	5.512	9.685	3.780	3.386	1.504	2.795	184	48,642	212,152	40,641	48,188	48,188	12	M16	88.2	60,812	
						5.906	9.685						57,235	232,850							49,059	71,544
						6.102	9.685						61,771	243,199							50,075	77,223
200	x	350	7.874	x	13.780	5.906	9.685	3.780	3.386	1.504	2.795	184	55,317	224,976	39,625	47,317	47,317	12	M16	86.0	69,146	
						6.102	9.685						59,743	235,100							47,898	74,641
						6.299	9.685						64,315	245,449							48,914	80,394

- Surface finishes For shaft $R_a \leq 3,2 \mu\text{m}$
- Tolerances For shaft see table page 8
- When using a hollow shaft instead of a solid shaft please contact our Engineering-Team

Explanations to tables: Page 63 [More sizes on request](#)

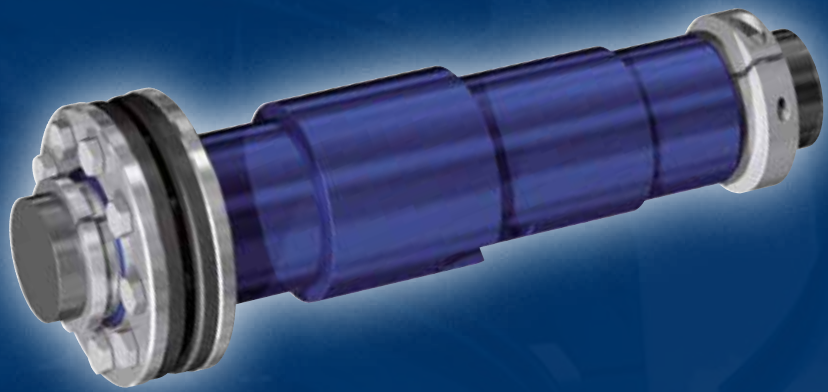
Ordering example: RfN 4061

Series	d	D	Version
RfN 4061	3.740	6.693	SST

SST = Stainless steel

RINGFEDER® Smart-Lock





Smart-Lock-Set RfN 4001

Smart-Lock-Set: the connection of the future

For the perfect hollow shaft connection, the solid shaft is always manufactured to a high degree of precision, normally with a dimensional tolerance of h6/H6. This close tolerance, high-finish shaft is inserted into the equally close tolerance hollow bore of the gearbox and secured in place by the compressive force of the shrink disc. Only by maintaining the strict dimensional tolerances the full torque capacity can be reliability achieved. Smart-Lock puts an end to all the precision machining involved and guarantees an optimum connection even with clearances up to 0.2 mm/0.007 in.

The flexibility offered by using interchangeable bushings between the solid shaft and the hollow shaft of the gearbox makes the Smart-Lock-Set an invaluable aid to the marketplace. Thanks to the availability of shaft adapter bushings with various inside diameters. One gearbox can be used with a range of shaft sizes without a change out to the shaft or shrink disc. The ease of selecting and using the Smart-Lock-Set is child's play.

The Smart-Lock-Set is an efficient design that makes economic sense to the user. Not only can it compensate larger dimensional tolerances (up to 0.2 mm/0.007 in.), it also offers significant cost savings by requiring a minimal number of spare parts needed in inventory. Furthermore, inexpensive, cold drawn, commercial available shafting up to quality grade h11 can be utilized without additional machining. The export market also benefits from using Smart-Lock-Set; adapter bushings in inch size standards are readily available from local inventories for countries that don't use metric measurements. Expensive specials and large spare part inventories are a thing of the past.

Characteristics

Flexible, cost-saving, easy to maintain: Smart-Lock-Set is the new Shaft/Hollow Shaft connection from RINGFEDER®. Cylindrical bushings allow the attachment of hollow shaft gear reducers and other hollow shaft connections to any metric and inch size solid shaft diameter.

▪ **Reliable:**

Tension-optimized and virtually indestructible shrink discs guarantee the highest possible degree of safety.

▪ **Uncompromising:**

Cylindrical bushings for a wide range of shaft diameters provide the perfect connection.

▪ **Economical:**

The Smart-Lock-Set requires minimal labor at installation and reduces spare part inventory costs up to 70%.

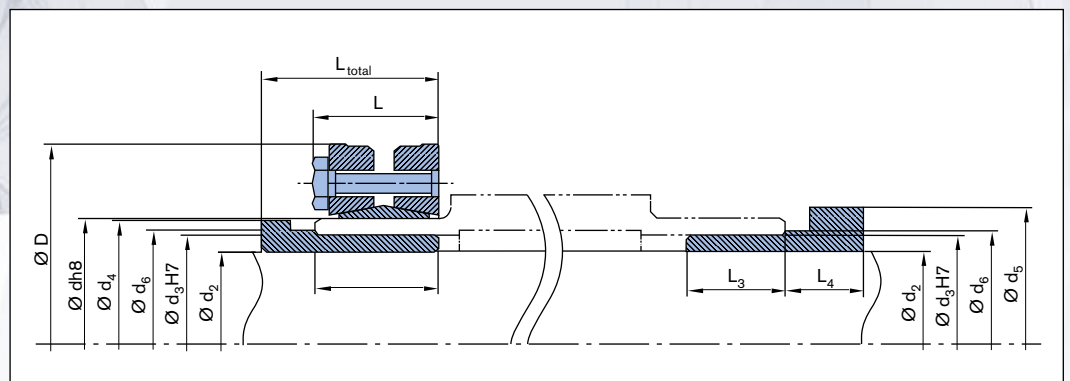
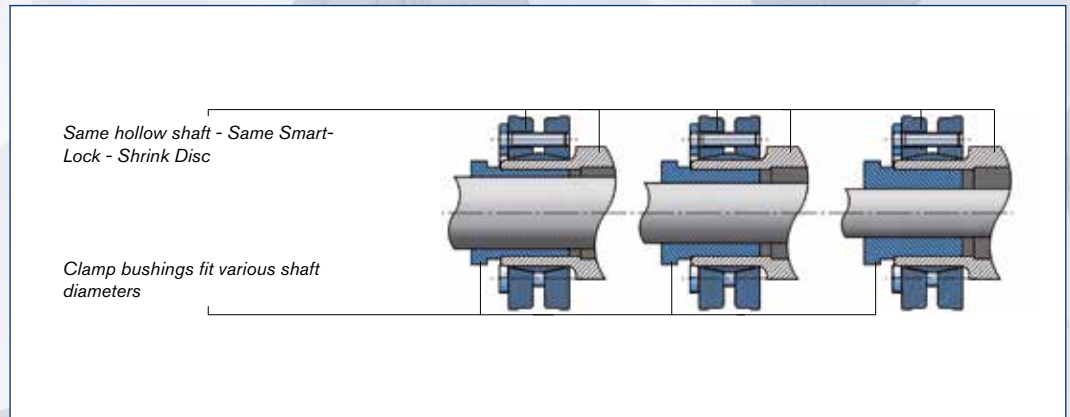
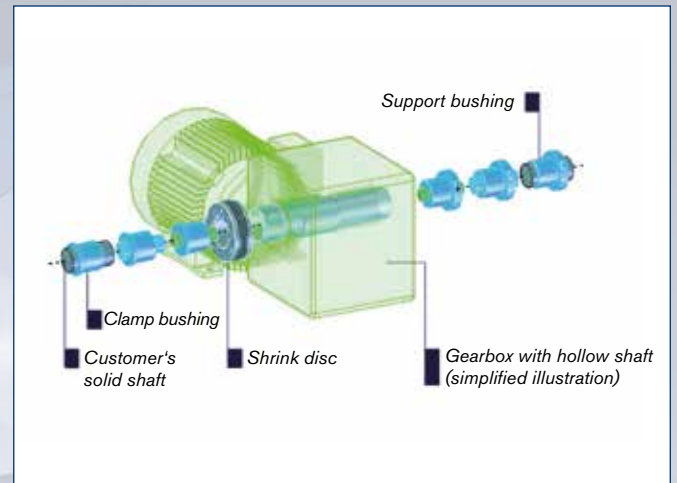
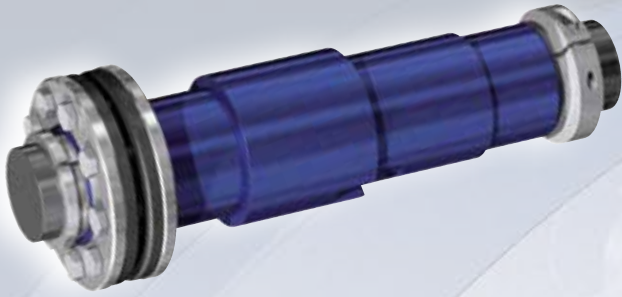
Technical details of the Smart-Lock-Set

For gearbox manufacturers:

- Eight standard sizes of adaptor bushings are available for hollow shaft outside diameters from 44 to 90 mm.
- Commercially available solid shafting without any machining can be used. Diameters from 25 to 70 mm are possible.
- The range of transmissible torque is 580 Nm–5600 Nm.

For users of gearboxes:

- The torque to be transmitted is the criterion used to select the shaft diameter.
- The optimum shaft size for an individual gearbox can be used in connection with the Smart-Lock-Set.
- It is possible to standardize on a certain gearbox size for a range of shaft diameters. The results are lower costs for maintenance and spare parts.



RINGFEDER® Smart-Lock RfN 4001 · Dimensions

Dimensions											Max. allowable clearance	Technical data					
Ød	Ød ₂	Ød ₃	Ød ₄	Ød ₅	Ød ₆	ØD	L _{total}	L	L ₃	L ₄		Transmissible torque	Axial force	Screws	Tightening torque	Weight	
mm/in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	lb-in.	lb-ft.	lbs	ISO 4014/4017-10.9	lbs-ft	lbs
44	1 1 1/8 1 3/16 1 1/4	1.417	1.693	1.949	1.496	3.150	1.614	1.220	1.181	0.709	0.005	5.222 5.841 6.019 6.196	435 487 502 516	10.566	M6	8.85	1.65
50	1 3/16 1 1/4 1 3/8 1 7/16	1.654	1.929	2.343	1.732	3.543	1.772	1.339	1.339	0.709	0.006	7.612 8.054 8.851 9.205	634 671 738 767	12.814	M6	8.85	2.20
55	1 3/16 1 1/4 1 3/8 1 7/16 1 1/2	1.890	2.126	2.539	1.969	3.937	1.811	1.378	1.378	0.709	0.006	7.966 8.408 9.293 9.647 10.090	664 701 774 804 841	13.489	M6	8.85	2.87
62	1 3/8 1 7/16 1 1/2 1 5/8 1 3/4	2.047	2.362	2.736	2.126	4.331	1.850	1.417	1.417	0.109	0.006	14.869 15.622 16.285 17.613 18.941	1.239 1.302 1.357 1.468 1.578	21.806	M6	8.85	3.31
68	1 5/8 1 3/4 1 15/16 2	2.362	2.638	2.933	2.441	4.528	1.890	1.457	1.457	0.709	0.006	17.879 19.295 21.357 19.560	1.490 1.608 1.780 1.630	22.031	M6	8.85	3.86
75	1 15/16 2	2.559	2.874	3.130	2.638	5.433	1.969	1.535	1.535	0.709	0.006	16.374 16.462	1.364 1.372	16.861	M8	22.13	5.95
80	1 15/16 2 2 3/8 2 7/16	2.756	3.071	3.327	2.835	5.709	1.969	1.535	1.535	0.709	0.007	31.155 29.384 34.872 35.846	2.596 2.449 2.906 2.987	32.148	M8	22.13	6.39
90	2 3/8 2 7/16 2 3/4	2.953	3.465	3.524	3.031	6.102	2.244	1.811	1.811	0.709	0.007	42.041 43.192 48.679	3.503 3.599 4.057	35.520	M8	22.13	8.60

Larger dimensions available upon request. Technical data subject to change without notice. The Smart-Lock-Set is supplied with a Shrink Disc RfN 4061. The bushings are only suitable for one-time use.

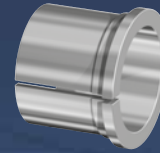
Ordering example: RfN 4001

Series	d	d ₂
RfN 4001	1.969	1 1/4

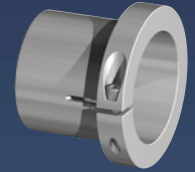
■ When using a hollow shaft instead of a solid shaft please contact our Engineering-Team



Shrink Disc



CB · Clamp bushing



SB · Support bushing

Smart-Lock-Set-Part numbers for inch size spare parts

Shrink Disc	Ød	Ød ₂	Ød ₃	Clamp bushing	Support bushing
	mm	mm	mm	Inch sizes	Inch sizes
RfN 4061-44x80	44	1.0	36	44 CB 1.0/36	44 SB 1.0/36
		1.125		44 CB 1.125/36	44 SB 1.125/36
		1.1875		44 CB 1.1875/36	44 SB 1.1875/36
		1.25		44 CB 1.25/36	44 SB 1.25/36
RfN 4061-50x90	50	1.1875	42	50 CB 1.875/42	50 SB 1.875/42
		1.25		50 CB 1.25/42	50 SB 1.25/42
		1.375		50 CB 1.375/42	50 SB 1.375/42
		1.4375		50 CB 1.4375/42	50 SB 1.4375/42
RfN 4061-55x100	55	1.1875	48	55 CB 1.875/48	55 SB 1.875/48
		1.25		55 CB 1.25/4	55 SB 1.875/48
		1.375		55 CB 1.375/48	55 SB 1.875/48
		1.4375		55 CB 1.4375/48	55 SB 1.875/48
RfN 4061-62x110	62	1.5	52	55 CB 1.5/48	55 SB 1.5/48
		1.375		62 CB 1.375/52	62 SB 1.375/52
		1.4375		62 CB 1.4375/52	62 SB 1.4375/52
		1.5		62 CB 1.5/52	62 SB 1.5/52
		1.625		62 CB 1.625/52	62 SB 1.625/52
RfN 4061-68x115	68	1.75	60	62 CB 1.75/52	62 SB 1.75/52
		1.9375		62 CB 1.9375/52	62 SB 1.9375/52
		1.625		68 CB 1.625/60	68 SB 1.625/60
		1.75		68 CB 1.75/60	68 SB 1.75/60
RfN 4061-75x138	75	1.9375	65	68 CB 1.9375/60	68 SB 1.9375/60
		2.0		68 CB 2.0/60	68 SB 2.0/60
		1.9375		75 CB 1.9375/65	75 SB 1.9375/65
RfN 4061-80x145	80	2.0	70	75 CB 2.0/65	75 SB 2.0/65
		2.375		80 CB 1.9375/70	80 SB 1.9375/70
		2.4375		80 CB 2.0/70	80 SB 2.0/70
RfN 4061-90x155	90	2.375	75	80 CB 2.375/70	80 SB 2.375/70
		2.4375		80 CB 2.4375/70	80 SB 2.4375/70
		2.375		90 CB 2.375/75	90 SB 2.375/75
		2.75		90 CB 2.4375/75	90 SB 2.4375/75
				90 CB 2.75/75	90 SB 2.75/75

* Ordering examples metric sizes. All spare parts can be ordered individually.

Ordering example Shrink Disc: RfN 4061

Shrink Disc
RfN 4061 – 44 x 80

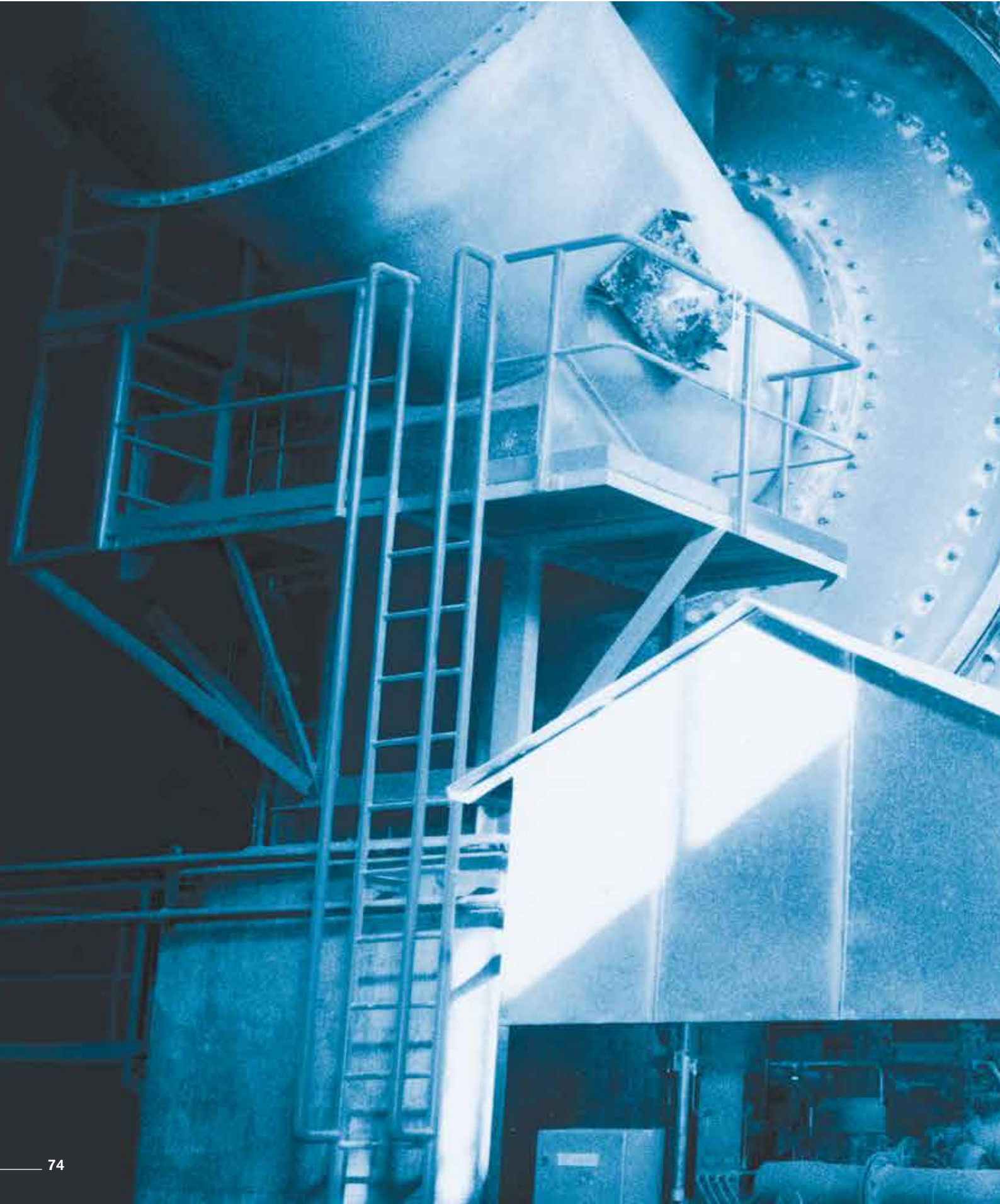
Ordering examples adapter bushings: RfN 4001

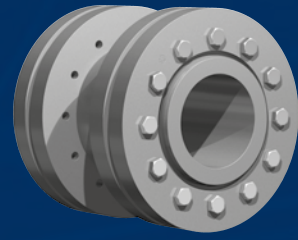
Series	d	Version
RfN 4001	80	CB 55 x 70
RfN 4001	55	SB 35 x 48

CB = Clamp bushing

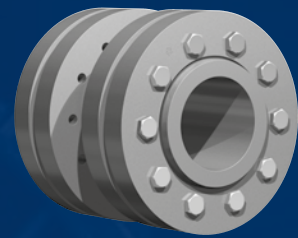
SB = Support bushing

RINGFEDER® Shaft Couplings





RfN 5071



RfN 5091

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. Being positioned around the hub there is only one interface transmitting the loads giving the shrink disc method distinct advantages such as offering the possibility of very concentric and well balanced connections that are suited to high speed applications. Traditional shrink fits require complicated calculations, close machining tolerances and fine surface finishes, they also need considerable effort with mounting and removal. The shrink disc connection has none of these disadvantages and is better than any of the other usual connection methods with regard to fatigue strength under alternating torsional stress.

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.

Explanations to tables

Basic dimensions when screws are not tightened

d	=	Inner diameter
D	=	Outer diameter
d_w	=	Solid shaft diameter
L_{total}	=	Total length (several parts)
L	=	Overall length
T_A	=	Max. tightened torque of the screws
T	=	Transmissible torque at given T_A
F_{ax}	=	Transmissible axial force

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

Function values

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

The locking screws are lubricated using MoS₂ ($\mu_{tot} = 0,1$).

The tapered cones are lubricated using MoS₂ ($\mu = 0,05$).

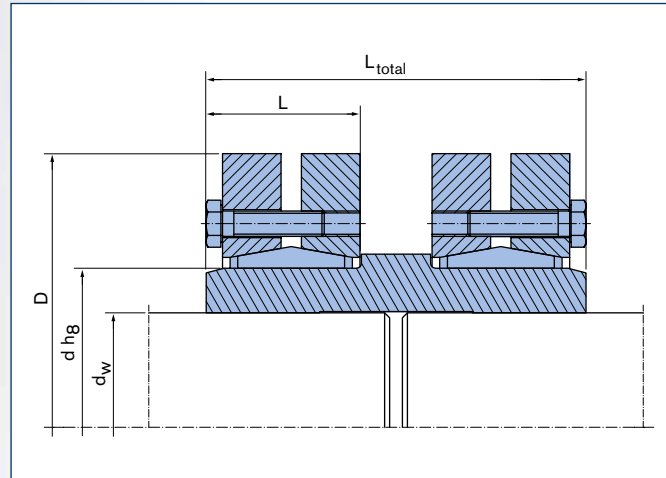
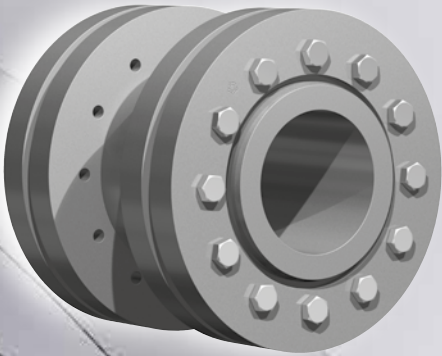
The contact surfaces (d_w) are in lightly oiled condition with coefficient of friction $\mu = 0,12$.

The hub and shaft materials have a modulus of elasticity of 210,000 N/mm². (Lower values result in increased values for T and F_{ax} with reduced tangential stress.)

The maximum clearance S is being fully utilized.

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

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



RINGFEDER® Shaft Coupling RfN 5071 · Dimensions

Explanations

- T_A = Max. tightened torque of the screws
- T = Transmissible torque at given T_A
- F_{ax} = Transmissible axial force

Clearances considered for the calculation of the function values:

d_w	ISO	max. Clearance S	
		above inch	up to inch
0.236	H6/j6	0.394	0.0005
0.394		0.709	0.0006
0.709	H6/h6	1.181	0.0007
1.181	H7/g6	1.969	0.0013
1.969		3.150	0.0019
3.150		4.724	0.0027
4.724		7.087	0.0031
7.087		9.843	0.0035
9.843		12.402	0.0040
12.402		15.748	0.0044
15.748		19.685	0.0048
19.685		24.803	0.0054
24.803		31.496	0.0061

Surface

For shaft diameter d_w : Peak-to-valley height $R_a \leq 125$ RMS.

Shaft couplings dimensions								Transmissible torques or axial forces		Locking Screws DIN EN ISO 4014 / 4017 - 10.9			
d	x	D	d	x	D	d _w	L _{total}	L	T _A	T	F _{ax}	Thread	
mm			inch			inch	inch	inch	ft-lbs	ft-lbs	lbs		
20	x	46	0.787	x	1.811	0.591 0.630 0.669	1.772	0.827	3	81 103 118	4,496 4,946 5,395	M5	
24	x	50	0.945	x	1.969	0.748 0.787 0.827	1.969	0.906	3.7	177 199 221	7,194 7,868 8,543	M5	For all shaft couplings intermediate values for T and F _{ax} can be calculated dependent on T _A and the clearance S. In addition, stepped shaft couplings are available for different shaft diameters.
30	x	52	1.181	x	2.047	0.945 0.984 1.024	2.165	1.024	3.7	258 295 325	8,543 9,217 9,667	M5	
36	x	72	1.417	x	2.835	1.102 1.181 1.220	2.559	1.102	9	435 509 516	11,915 13,039	M6	If required, we like to be of assistance.
40	x	72	1.575	x	2.835	1.181 1.220 1.260	2.559	1.142	9	531 538 583	13,713 13,264 13,938	M6	
44	x	80	1.732	x	3.150	1.260 1.378 1.417	2.756	1.181	9	590 738 774	14,163 16,411 17,085	M6	
50	x	90	1.969	x	3.543	1.496 1.575 1.654	3.150	1.260	9	996 1,106 1,254	20,008 21,582 23,155	M6	
55	x	100	2.165	x	3.937	1.654 1.772 1.890	3.346	1.378	9	959 1,143 1,328	17,535 19,558 21,582	M6	
62	x	110	2.441	x	4.331	1.890 1.969 2.047	3.543	1.378	9	1,770 1,955 2,065	28,326 29,900 30,574	M6	
68	x	115	2.677	x	4.528	1.969 2.165 2.362	3.937	1.378	9	1,401 1,660 2,102	21,357 23,380 27,202	M6	
75	x	138	2.953	x	5.433	2.165 2.362 2.559	4.724	1.496	22	1,955 2,434 2,987	27,202 31,248 35,520	M8	
80	x	145	3.150	x	5.709	2.362 2.559 2.756	5.118	1.496	22	2,360 2,876 3,393	28,326 32,148 35,969	M8	
90	x	155	3.543	x	6.102	2.559 2.756 2.953	5.512	1.772	22	3,540 4,462 5,414	39,117 43,838 48,334	M8	
100	x	170	3.937	x	6.693	2.756 2.953 3.150	6.299	2.087	22	5,126 5,605 6,712	45,411 50,132 55,078	M8	
110	x	185	4.331	x	7.283	2.953 3.150 3.346	7.087	2.362	45	6,011 7,449 8,998	58,226 64,071 66,543	M10	
125	x	215	4.921	x	8.465	3.346 3.740 3.740	7.874	2.402	45	8,150 9,662 11,174	67,443 73,513 79,807	M10	
140	x	230	5.512	x	9.055	3.740 3.937 4.134	8.268	2.677	75	11,137 12,944 14,751	82,055 88,800 95,319	M12	
165	x	290	6.496	x	11.417	4.528 4.724 4.921	9.449	3.189	185	23,159 26,183 29,060	135,110 143,203 149,273	M16	
185	x	330	7.283	x	12.992	5.315 5.512 5.709	10.433	3.819	185	38,722 42,299 46,024	176,700 186,142 195,584	M16	

■ Surface finishes
For shaft $R_a \leq 3,2 \mu\text{m}$

■ Tolerances
For shaft see table page 78

Explanations to tables: Page 77

To continue see next page

■ When using a hollow shaft instead of a solid shaft
please contact our Engineering-Team

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.

Slitted 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.

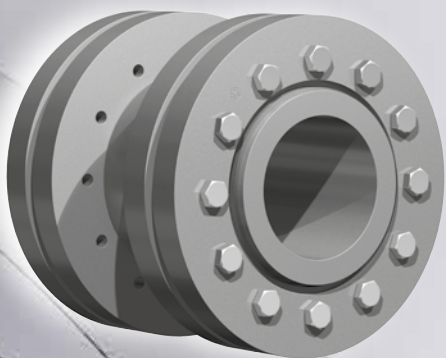
Simplified manufacture – only plain shaft and bore diameters with easily achieved surface finish and tolerances are required.

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.



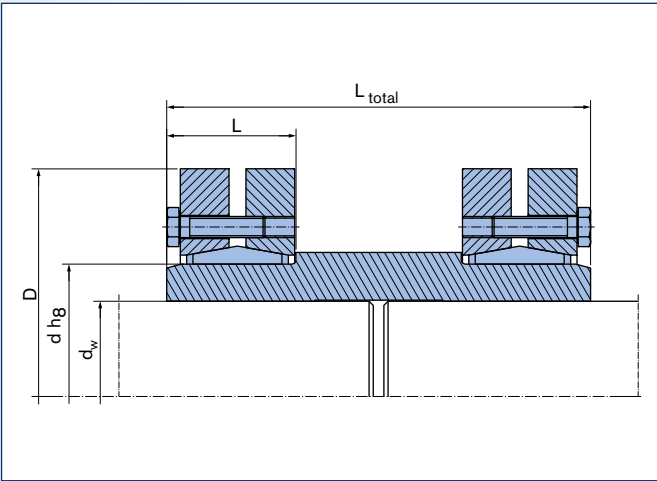
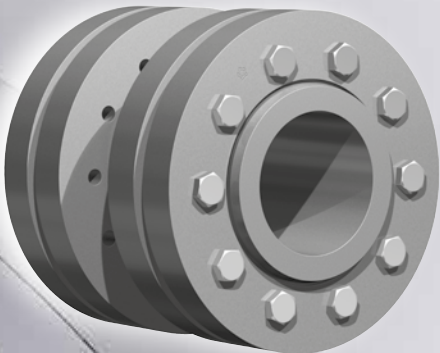
Shaft couplings dimensions								Transmissible torques or axial forces		Locking Screws DIN EN ISO 4014 / 4017 - 10.9			
d	x	D	d	x	D	d _w	L _{total}	L	T _A	T	F _{ax}	Thread	
mm		inch		inch	inch	inch	inch	inch	ft-lbs	ft-lbs	lbs		
200	x	350	7.874	x	13.780	5.906	11.417	3.780	185	55,317	224,809	M16	
						6.102				59,743	234,925		
						6.299				64,315	245,267		
220	x	370	8.661	x	14.567	6.299	12.205	4.488	185	70,068	267,523	M16	
						6.496				75,231	278,538		
						6.693				81,132	290,003		
240	x	405	9.449	x	15.945	6.693	13.780	4.803	361	88,507	329,120	M20	For all shaft couplings intermediate values for T and F _{ax} can be calculated dependent on T _A and the
						7.087				101,784	354,299		
						7.480				115,060	376,555		
260	x	430	10.236	x	16.929	7.480	15.354	5.236	361	120,960	395,664	M20	clearance S. In addition, stepped shaft couplings are available for different shaft diameters.
						7.874				135,711	422,641		
						8.268				151,200	451,866		
280	x	460	11.024	x	18.110	8.268	16.929	5.787	361	160,051	469,851	M20	If required, we like to be of assistance.
						8.661				179,965	499,076		
						9.055				199,142	528,301		
300	x	485	11.811	x	19.094	9.055	17.520	6.102	361	202,830	546,510	M20	
						9.449				217,581	577,084		
						9.646				232,332	592,596		
320	x	520	12.598	x	20.472	9.449	18.110	6.102	361	230,119	595,069	M20	
						9.843				250,771	626,318		
						10.236				275,848	651,946		
340	x	570	13.386	x	22.441	9.843	18.898	6.654	361	287,649	701,179	M20	
						10.236				311,620	730,404		
						10.630				339,279	764,350		
350	x	580	13.780	x	22.835	10.630	19.291	6.890	361	326,002	736,474	M20	
						11.024				354,030	771,095		
						11.220				368,781	786,831		
360	x	590	14.173	x	23.228	11.024	19.685	6.890	361	341,491	744,117	M20	
						11.417				370,256	778,064		
						11.614				385,007	794,924		
380	x	645	14.961	x	25.394	11.417	20.866	7.205	620	418,198	879,003	M24	
						11.811				449,913	917,220		
						12.205				485,316	954,988		
390	x	660	15.354	x	25.984	11.811	21.260	7.205	620	460,239	935,205	M24	
						12.205				494,904	973,423		
						12.598				529,570	1,008,043		
400	x	680	15.748	x	26.772	12.402	21.260	7.205	620	494,167	957,686	M24	
						12.598				512,606	976,795		
						12.992				548,746	1,011,640		
420	x	690	16.535	x	27.165	12.992	22.835	7.992	620	575,298	1,090,323	M24	
						13.386				619,552	1,133,037		
						13.780				663,806	1,173,502		
440	x	750	17.323	x	29.528	13.386	23.622	8.661	620	594,475	1,065,594	M24	
						13.780				634,303	1,103,812		
						14.173				676,344	1,144,277		
460	x	770	18.110	x	30.315	14.173	24.409	8.661	620	737,562	1,274,666	M24	
						14.567				789,191	1,317,380		
						14.961				840,821	1,360,094		
480	x	800	18.898	x	31.496	14.961	25.394	9.055	620	862,948	1,382,575	M24	
						15.354				914,577	1,427,537		
						15.748				966,206	1,472,498		
500	x	850	19.685	x	33.465	15.748	26.378	9.055	920	967,681	1,474,746	M27	
						16.142				1,017,836	1,512,964		
						16.535				1,073,153	1,557,926		

- Surface finishes
For shaft R_a ≤ 3,2 μm
- Tolerances
For shaft see table page 78
- When using a hollow shaft instead of a solid shaft
please contact our Engineering-Team

Explanations to tables: Page 77

Ordering example: RfN 5071

Series	d	d _w
RfN 5071	15.354	25.984



RINGFEDER® Shaft Coupling RfN 5091 · Dimensions

Shaft couplings dimensions					Transmissible torques or axial forces			Locking Screws DIN EN ISO 4014 / 4017 - 10.9	
d x D	d x D	d _w	L _{total}	L	T _A	T	F _{ax}	Thread	
mm	inch	inch	inch	inch	ft-lbs	ft-lbs	lbs		
125 x 215	4.921 x 8.465	3.346	7.874	2.874	75	11,063	79,807	M12	For all shaft couplings intermediate values for T and F _{ax} can be calculated dependent on T _A and the clearance S. In addition, stepped shaft couplings are available for different shaft diameters.
		3.543				12,907	87,226		
		3.740				14,751	94,869		
140 x 300	5.512 x 11.811	3.543	8.661	4.173	185	27,069	97,342	M16	
		3.937				34,665	105,435		
		4.331				43,295	112,404		
155 x 263	6.102 x 10.354	4.134	9.055	3.622	75	21,316	123,645	M12	
		4.331				23,897	132,637		
		4.528				26,700	141,630		
165 x 290	6.496 x 11.417	4.528	9.449	3.858	185	30,240	166,359	M16	
		4.724				33,928	176,475		
		4.921				37,394	183,219		
175 x 300	6.890 x 11.811	4.921	10.433	4.882	185	53,695	261,902	M16	
		5.118				58,931	276,515		
		5.315				64,389	291,128		
185 x 330	7.283 x 12.992	5.315	10.433	4.803	185	53,104	247,290	M16	
		5.512				57,530	258,530		
		5.709				63,430	269,771		
195 x 350	7.677 x 13.780	5.512	11.024	4.803	185	55,317	241,670	M16	
		5.906				64,905	267,073		
		6.102				70,806	277,639		
200 x 350	7.874 x 13.780	5.906	11.417	4.803	185	68,224	276,515	M16	
		6.102				73,756	290,003		
		6.299				78,919	302,368		
220 x 370	8.661 x 14.567	6.299	12.205	5.669	185	93,670	357,446	M16	
		6.496				100,308	370,935		
		6.693				108,053	386,671		
240 x 405	9.449 x 15.945	6.693	13.780	6.181	361	114,322	409,152	M20	
		7.087				129,811	440,625		
		7.480				146,037	467,603		
260 x 430	10.236 x 16.929	7.480	15.354	6.811	361	157,101	508,068	M20	
		7.874				177,015	544,038		
		8.268				197,667	580,007		
280 x 460	11.024 x 18.110	8.268	16.929	7.283	361	210,205	615,976	M20	
		8.661				236,020	654,194		
		9.055				261,835	694,660		
300 x 485	11.811 x 19.094	9.055	17.520	7.441	361	251,509	665,434	M20	
		9.449				277,323	703,652		
		9.646				290,599	722,761		
320 x 520	12.598 x 20.472	9.449	18.110	7.756	361	278,798	708,148	M20	
		9.843				306,088	747,490		
		10.236				332,641	780,087		
340 x 570	13.386 x 22.441	9.843	18.898	8.465	620	361,037	879,003	M24	
		10.236				390,908	916,096		
		10.630				426,311	961,058		
350 x 580	13.780 x 22.835	10.630	19.291	8.465	620	410,085	926,662	M24	
		11.024				445,488	971,174		
		11.220				463,927	992,531		
360 x 590	14.173 x 23.228	11.024	19.685	8.622	620	451,388	982,415	M24	
		11.417				489,004	1,027,377		
		11.614				508,180	1,049,858		
380 x 645	14.961 x 25.394	11.417	20.866	8.622	620	455,813	959,934	M24	
		11.811				492,691	1,001,524		
		12.205				530,307	1,044,237		

■ Surface finishes
For shaft R_a ≤ 3,2 μm

■ Tolerances
For shaft see table page 78

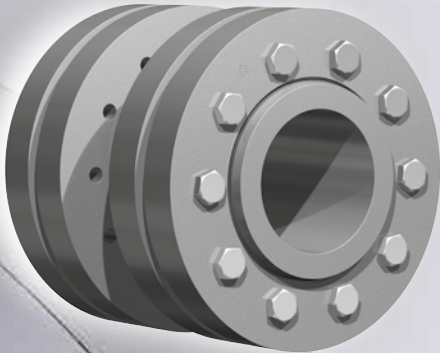
Explanations to tables: Page 77

To continue see next page

■ When using a hollow shaft instead of a solid shaft
please contact our Engineering-Team

Ordering example: RfN 5091

Series	d	d _w
RfN 5091	9.449	15.945



Characteristics

Heavy design – for highest transmission values.

Slitted 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.

Shaft couplings dimensions					Transmissible torques or axial forces			Locking Screws DIN EN ISO 4014 / 4017 - 10.9	
d x D	d x D	d _w	L _{total}	L	T _A	T	F _{ax}	Thread	
mm	inch	inch	inch	inch	ft-lbs	ft-lbs	lbs		
390 x 660	15.354 x 25.984	11.811	21.260	8.937	620	522,194	1,059,974	M24	For all shaft couplings intermediate values for T and F _{ax} can be calculated dependent on T _A and the clearance S. In addition, stepped shaft couplings are available for different shaft diameters. If required, we like to be of assistance.
		12.205				562,022	1,103,812		
		12.598				600,744	1,144,277		
400 x 680	15.748 x 26.772	12.402	21.260	8.937	620	564,235	1,091,447	M24	
		12.598				581,199	1,107,633		
		12.992				623,240	1,152,146		
420 x 690	16.535 x 27.165	12.992	22.835	9.961	620	736,825	1,361,218	M24	
		13.386				787,716	1,412,924		
		13.780				840,821	1,464,630		
440 x 750	17.323 x 29.528	13.386	23.622	10.591	920	780,341	1,400,559	M27	
		13.780				833,445	1,452,265		
		14.173				888,025	1,503,972		
460 x 770	18.110 x 30.315	14.173	24.409	10.591	920	973,582	1,672,578	M27	
		14.567				104,7338	1,731,029		
		14.961				1,106,343	1,787,231		
480 x 800	18.898 x 31.496	14.961	25.394	11.457	920	1,132,158	1,816,456	M27	
		15.354				1,199,276	1,874,906		
		15.748				1,268,607	1,933,357		
500 x 850	19.685 x 33.465	15.748	26.378	11.457	920	1,290,734	1,967,078	M27	
		16.142				1,357,114	2,018,784		
		16.535				1,430,870	2,079,482		

- Surface finishes
For shaft $R_a \leq 3,2 \mu\text{m}$
- Tolerances
For shaft see table page 78
- When using a hollow shaft instead of a solid shaft
please contact our Engineering-Team

Explanations to tables: Page 77

Ordering example: RfN 5091

Series	d	d _w
RfN 5091	14.173	11.024

Flange Couplings RINGFEDER® RfN 5571



RINGFEDER® Flange Couplings are the better alternative to press fits. Neither additional components such as keyways or wedges, nor a warming of the outer section and cooling of the inner section are required. The flange coupling is simply pushed onto the shaft

and fastened so it is frictionally engaged by tightening the screws in the shrink disc. They transfer torque and bending moments as well as axial and radial forces.

Advantages

- *Strong connection with high torque capacity*
- *Easy assembly and disassembly*
- *Backlash-free shaft hub connection*
- *High level of true running accuracy*

Applications

- *Mining companies*
- *Plant manufacturers*
- *Gearbox manufacturers*

Designs

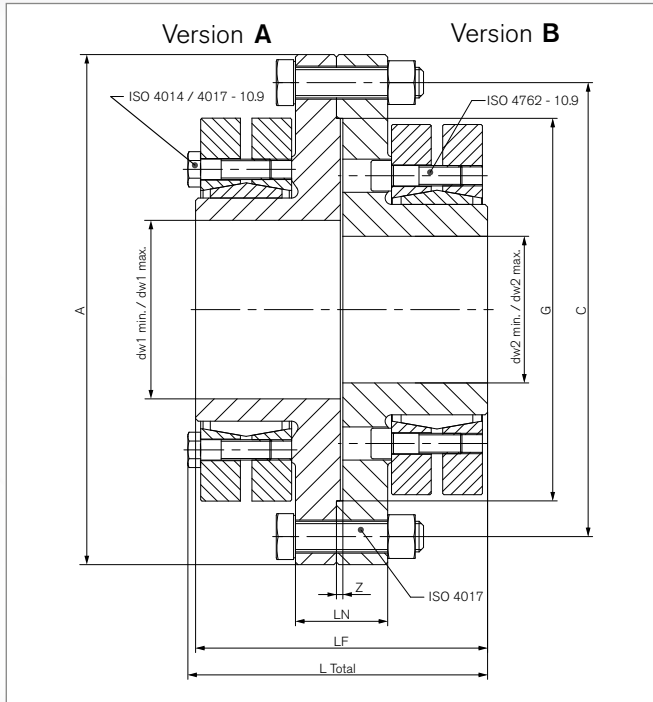
Version A Shrink Discs with hexagon head screws



Version B Shrink Discs with hexagon socket head cap screws



Flange Couplings RINGFEDER® RfN 5571



Explanations to tables

Basic dimensions when screws are not tightened

- dw₁** = Solid shaft diameter
- dw₂** = Solid shaft diameter
- A** = Max. outer diameter
- C** = Pitch circle diameter
- G** = Center diameter
- LF** = Total length of the mated flanges (HM+HF)
- LN** = Flange width
- L_{total}** = Total length (several parts)
- Z** = Depth of center value
- T** = Transmissible torque at given T_A
- n_{Sc3}** = Quantity of screws at flange
- D_{G3}** = Thread of the flange screws
- T_{A3}** = Tightening torque of the flange bolts (D_{G3})
- n_{SD}** = Quantity of screws (Shrink disc)
- D_{SD}** = Diameter of screws (Shrink disc)
- T_A** = Max. tightened torque of the clamping screws
- Gw** = Weight

Flange Couplings RINGFEDER® RfN 5571

Size	Flange couplings dimensions									Transmissible torques T	Flange screws ISO 4017			Shrink disc screws Version A: ISO 4014/4017 - 10.9 Version B: ISO 4762 - 10.9				Gw
	d _{w1}	d _{w2}	A	C	G	L _F	L _N	L _{total}	Z		n _{Sc3}	D _{G3}	T _{A3}	Size	n _{SD}	D _{SD}	T _A	
	inch	inch	inch	inch	inch	inch	inch	inch	inch		ft-lbs	pcs.	mm	ft-lbs	inch	pcs.	mm	
075	2.756	2.756								5,148				100x170	12	M 8	22	
	2.953	2.953	9.449	8.268	6.693	5.354	1.732	5.787	0.157	5,606	6	M16	155	100x170	12	M 8	22	57
	3.150	3.150								6,712				100x170	12	M 8	22	
090	2.756	2.756								5,148				100x170	12	M 8	22	
	2.953	2.953								5,606				100x170	12	M 8	22	
	3.150	3.150	12.008	10.433	8.465	6.299	1.890	6.654	0.197	6,712	6	M20	310	100x170	12	M 8	22	106
	>3.150	>3.150								6,823				125x215	12	M 10	44	
	3.543	3.543								9,662				125x215	12	M 10	44	
	3.937	3.937								13,166				125x215	12	M 10	44	
100	3.543	3.543								10,105				130x215	12	M 10	44	
	3.740	3.740								11,654				130x215	12	M 10	44	
	3.937	3.937	13.386	11.260	9.055	7.480	2.205	7.756	0.197	13,424	5	M24	531	130x215	12	M 10	44	139
	>3.937	>3.937								12,944				140x230	10	M 12	74	
	4.331	4.331								16,890				140x230	10	M 12	74	
	4.528	4.528								19,051				140x230	10	M 12	74	
120	3.740	3.740								11,137				140x230	10	M 12	74	
	4.134	4.134								14,751				140x230	10	M 12	74	
	4.528	4.528	15.748	14.016	11.811	8.976	2.835	9.449	0.197	19,066	8	M24	531	140x230	10	M 12	74	265
	>4.528	>4.528								23,197				165x290	8	M 16	184	
	4.921	4.921								29,060				165x290	8	M 16	184	
	5.315	5.315								36,473				165x290	8	M 16	184	
130	4.528	4.528								23,197				165x290	8	M 16	184	
	4.921	4.921								29,060				165x290	8	M 16	184	
	5.315	5.315	15.748	14.016	11.811	8.976	2.835	9.449	0.197	36,473	8	M24	531	165x290	8	M 16	184	265
	>5.315	>5.315								33,559				175x300	8	M 16	184	
	5.413	5.413								35,071				175x300	8	M 16	184	
	5.512	5.512								36,657				175x300	8	M 16	184	
150	4.921	4.921								27,032				175x300	8	M 16	184	
	5.118	5.118								30,646				175x300	8	M 16	184	
	5.512	5.512	18.701	16.535	13.780	10.945	3.543	11.417	0.236	36,657	10	M30	1,069	175x300	8	M 16	184	474
	>5.512	>5.512								48,643				195x350	12	M 16	184	
	5.906	5.906								57,235				195x350	12	M 16	184	
	6.496	6.496								71,471				195x350	12	M 16	184	
165	5.512	5.512								48,643				195x350	12	M 16	184	
	5.906	5.906								57,235				195x350	12	M 16	184	
	6.496	6.496	20.079	17.323	14.567	12.362	3.543	12.835	0.236	71,471	14	M30	1,069	195x350	12	M 16	184	595
	>6.496	>6.496								76,117				220x370	15	M 16	184	
	6.693	6.693								81,612				220x370	15	M 16	184	
	7.087	7.087								93,266				220x370	15	M 16	184	
180	6.299	6.299								70,807				220x370	15	M 16	184	
	6.693	6.693								81,612				220x370	15	M 16	184	
	7.087	7.087	21.260	18.701	15.945	12.677	3.465	13.346	0.236	93,266	16	M30	1,069	220x370	15	M 16	184	683
	>7.087	>7.087								104,329				240x405	12	M 20	361	
	7.480	7.480								118,269				240x405	12	M 20	361	
	7.874	7.874								133,168				240x405	12	M 20	361	
200	6.693	6.693								91,311				240x405	12	M 20	361	
	7.283	7.283								111,189				240x405	12	M 20	361	
	7.874	7.874	22.047	19.685	16.929	14.488	4.331	15.079	0.315	133,168	16	M30	1,069	240x405	12	M 20	361	871
	>7.874	>7.874								140,323				260x430	14	M 20	361	
	8.268	8.268								157,029				260x430	14	M 20	361	
	8.661	8.661								174,693				260x430	14	M 20	361	
220	7.480	7.480								124,649				260x430	14	M 20	361	
	8.071	8.071								148,547				260x430	14	M 20	361	
	8.661	8.661	23.228	20.866	18.110	15.433	4.094	16.024	0.315	174,693	18	M30	1,069	260x430	14	M 20	361	981
	>8.661	>8.661								181,774				280x460	16	M 20	361	
	9.055	9.055								201,246				280x460	16	M 20	361	
	9.449	9.449								221,787				280x460	16	M 20	361	

Flange Couplings RINGFEDER® RfN 5571

Size	Flange couplings dimensions									Transmissible torques T	Flange screws ISO 4017			Shrink disc screws Version A: ISO 4014/4017 - 10.9 Version B: ISO 4762 - 10.9				
	d _{w1}	d _{w2}	A	C	G	L _F	L _N	L _{total}	Z		n _{Sc3}	D _{G3}	T _{A3}	Size	n _{SD}	D _{SD}	T _A	G _w
	inch	inch	inch	inch	inch	inch	inch	inch	inch		ft-lbs	pcs.	mm	ft-lbs	inch	pcs.	mm	ft-lbs
240	8.268	8.268	24.213	21.850	19.094	16.063	4.094	16.654	0.315	163,335	20	M30	1,069	280x460	16	M 20	361	1,102
	8.858	8.858								191,363				280x460	16	M 20	361	
	9.449	9.449								221,787				280x460	16	M 20	361	
	>9.449	>9.449								229,052				300x485	18	M 20	361	
	9.843	9.843								251,327				300x485	18	M 20	361	
	10.236	10.236								273,417				300x485	18	M 20	361	
260	9.055	9.055	27.953	25.197	22.441	17.717	4.646	18.307	0.315	207,884	24	M30	1,069	300x485	18	M 20	361	1,720
	9.646	9.646								240,042				300x485	18	M 20	361	
	10.236	10.236								273,417				300x485	18	M 20	361	
	>10.236	>10.236								314,057				340x570	24	M 20	361	
	10.827	10.827								356,394				340x570	24	M 20	361	
	11.417	11.417								401,644				340x570	24	M 20	361	
290	9.055	9.055	28.346	25.984	23.228	17.717	4.173	18.307	0.315	240,448	24	M30	1,069	340x570	24	M 20	361	1,742
	10.236	10.236								314,057				340x570	24	M 20	361	
	11.417	11.417								401,644				340x570	24	M 20	361	
	>11.417	>11.417								373,063				360x590	24	M 20	361	
	12.008	12.008								418,128				360x590	24	M 20	361	
	12.598	12.598								420,267				360x590	24	M 20	361	
310	11.024	11.024	31.693	28.937	25.984	19.055	4.488	19.291	0.315	344,519	28	M30	1,069	360x590	24	M 20	361	2,337
	11.811	11.811								402,787				360x590	24	M 20	361	
	12.598	12.598								464,595				360x590	24	M 20	361	
	>12.598	>12.598								530,718				390x660	21	M 24	620	
	12.992	12.992								545,802				390x660	21	M 24	620	
	13.386	13.386								545,802				390x660	21	M 24	620	
340	11.811	11.811	32.874	30.315	27.165	20.787	4.803	21.181	0.394	461,866	30	M30	1,069	390x660	21	M 24	620	2,712
	12.598	12.598								530,718				390x660	21	M 24	620	
	13.386	13.386								607,610				390x660	21	M 24	620	
	>13.386	>13.386								612,884				420x690	24	M 24	620	
	13.780	13.780								612,884				420x690	24	M 24	620	
	14.173	14.173								612,884				420x690	24	M 24	620	
380	12.992	12.992	36.220	33.268	30.315	21.890	5.039	22.598	0.394	592,933	35	M30	1,069	420x690	24	M 24	620	3,131
	13.583	13.583								654,925				420x690	24	M 24	620	
	14.173	14.173								720,200				420x690	24	M 24	620	
	>14.173	>14.173								754,165				460x770	28	M 24	620	
	14.764	14.764								774,449				460x770	28	M 24	620	
	15.354	15.354								774,449				460x770	28	M 24	620	
410	14.173	14.173	40.551	37.008	33.465	24.331	6.142	24.724	0.472	754,165	32	M36	1,770	460x770	28	M 24	620	4,850
	14.764	14.764								825,673				460x770	28	M 24	620	
	15.354	15.354								900,573				460x770	28	M 24	620	
	>15.354	>15.354								913,222				500x850	24	M 27	922	
	16.142	16.142								993,249				500x850	24	M 27	922	
	16.929	16.929								1,128,925				500x850	24	M 27	922	
440	15.748	15.748	43.307	39.370	35.433	27.402	6.299	27.323	0.551	965,737	36	M36	1,770	500x850	24	M 27	922	5,908
	16.339	16.339								1,043,145				500x850	24	M 27	922	
	16.929	16.929								1,128,925				500x850	24	M 27	922	
	>16.929	>16.929								1,319,107				530x900	30	M 27	922	
	17.520	17.520								1,389,951				530x900	30	M 27	922	
	18.110	18.110								1,389,951				530x900	30	M 27	922	
470	16.929	16.929	46.457	42.520	38.583	29.291	6.457	29.449	0.551	1,319,107	40	M36	1,770	530x900	30	M 27	922	7,363
	17.520	17.520								1,422,773				530x900	30	M 27	922	
	18.110	18.110								1,530,716				530x900	30	M 27	922	
	>18.110	>18.110								1,621,179				590x980	36	M 27	922	
	18.898	18.898								1,667,941				590x980	36	M 27	922	
	19.685	19.685								1,667,941				590x980	36	M 27	922	

Flange Couplings RINGFEDER® RfN 5571

Size	Flange couplings dimensions									Transmissible torques T	Flange screws ISO 4017			Shrink disc screws Version A: ISO 4014/4017 - 10.9 Version B: ISO 4762 - 10.9				Gw
	d _{w1}	d _{w2}	A	C	G	L _F	L _N	L _{total}	Z		n _{Sc3}	D _{G3}	T _{A3}	Size	n _{SD}	D _{SD}	T _A	
	inch	inch	inch	inch	inch	inch	inch	inch	inch		pcs.	mm	ft-lbs	inch	pcs.	mm	ft-lbs	
500	18.504	18.504	47.638	43.701	40.157	29.291	6.457	29.449	0.551	1699361	42	M36	1770	590x980	36	M 27	922	7981
	19.094	19.094												590x980	36			
	19.685	19.685												590x980	36			
	>19.685	>19.685												620x1020	38			
	20.472	20.472												620x1020	38			
	21.260	21.260												620x1020	38			

Surface finishes

For shaft: $R_a \leq 3,2 \mu\text{m}$


Tolerances

For shaft see table below

Explanations to tables: Page 88

Ordering example: RfN 5571

Series	Size	Version	d _{w1}	d _{w2}	Further details
RfN 5571	500	A	19.094	20.472	-



Series	Size	Version	d _{w1}	Further details
RfN 5571	500	B	19.094	HF

HM = Centering outside
HF = Centering inside




Table clearance

d _w		ISO	Max. Clearance S inch
above inch	up to inch		
0.236	0.394	H6/j6	0.0005
0.394	0.709		0.0006
0.709	1.181	H6/h6	0.0007
1.181	1.969	H6/g6	0.0013
1.969	3.150	H7/g6	0.0019
3.150	4.724		0.0027
4.724	7.087		0.0031
7.087	9.843		0.0035
9.843	12.402		0.0040
12.402	15.748		0.0044
15.748	19.685		0.0048
19.685	24.803		0.0054
24.803	31.496		0.0061

Clearances considered for the calculation of the function values

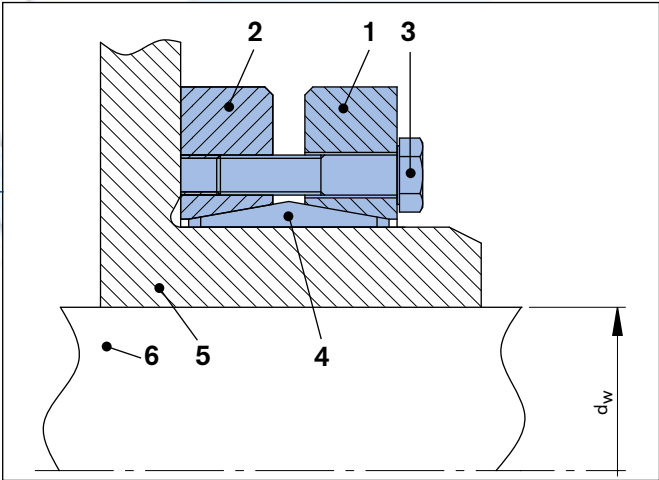


All technical details and information are non-binding and cannot be used as a basis for legal claims. The user is obligated to determine whether the represented products meet his requirements. We reserve the right at all times to carry out modifications in the interests of technical progress. Upon the issue of this catalogue all previous brochures and questionnaires on the products displayed are no longer valid.

Part description

3-part design

- 1 Front thrust ring
- 2 Rear thrust ring
- 3 Locking screw
- 4 Inner ring
- 5 Hub
- 6 Shaft



RINGFEDER® Shrink Discs RfN 4051/4061/4071/4073/4091/4061 stainless steel

Detailed installation and removal instructions can be found on our homepage www.ringfeder.com.

Installation and removal instructions

Shrink Discs RfN 4051, 4061, 4071, 4073, 4091,
4061 stainless steel

Installation

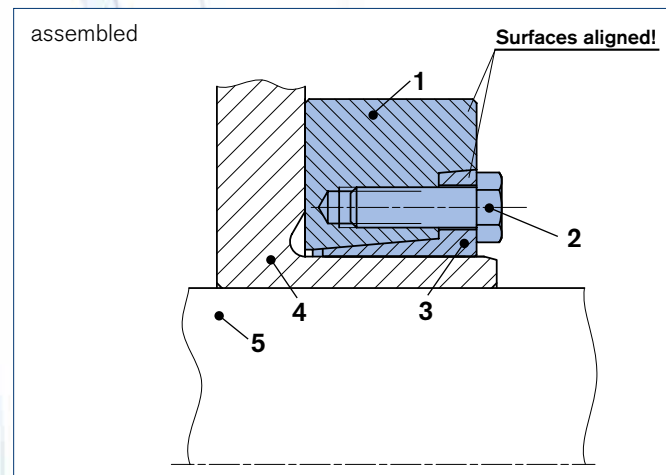
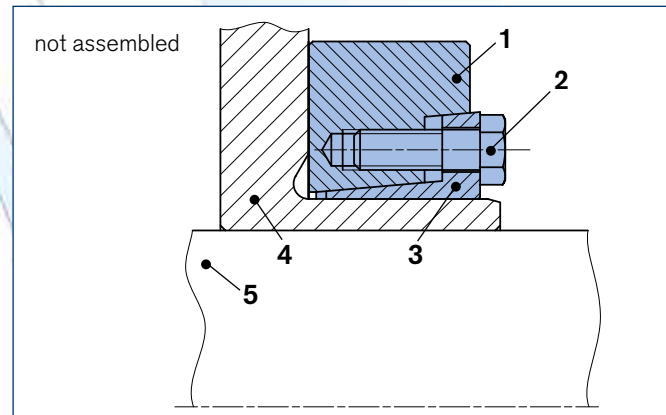
1. Clean the area on the hub where the shrink disc will be seated and oil to ease assembly, if necessary.
2. Removing spacers which may be present between the tensioning discs for transport purposes.
3. Sliding the shrink disc onto the hub.
Attention: Do not start tensioning before the shaft is in the bore of the hub, this may cause permanent deformation.
4. Slide the hub onto the shaft and position as required. Use a thin oil to lightly lubricate the hub bore and shaft to facilitate assembly.
Attention: Do not use lubricants containing MOS2.
5. Tighten by uniformly tensioning the screws in circular sequence, increasing the applied torque stepwise after each sequence. Tension the bolts in sequence (not cross-wise), using a torque wrench. Before starting to tension, make sure that the tensioning discs are aligned plane-parallel.
6. Re-check tightening torque by applying it to all screws all the way around. If all screws have reached the max. tightening torque T_A , the assembly is completed.

Removal

1. Loosen the tensioning bolts evenly and in sequence, again in several circular sequences, to avoid jamming of the discs on the inner ring. Never completely remove the tensioning bolts from their threaded holes, this creates a risk of accidents.
2. Sliding the shrink disc and its attachment part from the shaft. First remove possible traces of rust from the shaft.
3. Sliding the shrink disc from the hub.

Part description

2-part design



RINGFEDER® Shrink Discs RfN 4161/4181

- 1 Outer ring
- 2 Locking screw
- 3 Inner ring
- 4 Hub
- 5 Shaft

Detailed installation and removal instructions can be found on our homepage www.ringfeder.com.

Installation and removal instructions

Shrink Discs RfN 4161, 4181

Installation

1. Clean the area on the hub where the shrink disc will be seated and oil to ease assembly, if necessary.
2. Sliding the shrink disc onto the hub.
Attention: Do not start tensioning before the shaft is in the bore of the hub; this may cause permanent deformation.
3. Slide the hub onto the shaft and position as required. Use a thin oil to lightly lubricate the hub bore and shaft to facilitate assembly.
Attention: Do not use lubricants containing MOS_2 .
4. Tighten by uniformly tensioning the bolts in circular sequence, increasing the applied torque stepwise after each sequence. Tension the bolts in sequence (not cross-wise). Make sure that the faces of the inner and outer rings are aligned plane-parallel.



- Assembly, using a torque wrench:
Check torquing of the bolts in sequence of their positions. Assembly is only complete once all the bolts have been torqued as specified.



- Assembly, without a torque wrench:
Assembly is complete once the faces of the inner and outer rings are aligned flush.

Removal

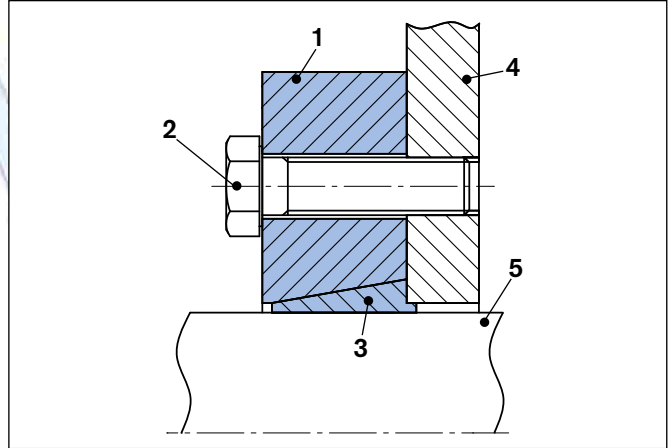
1. Loosen the tensioning bolts evenly and in sequence, again in several circular sequences, to avoid jamming of the discs on the inner ring. Never completely remove the tensioning bolts from their threaded holes, this creates a risk of accidents.
2. Disassembling the shaft, i.e. removing the hub from the shaft. First remove possible traces of rust on the shaft and the hub.
3. Sliding the shrink disc from the hub.

Part description

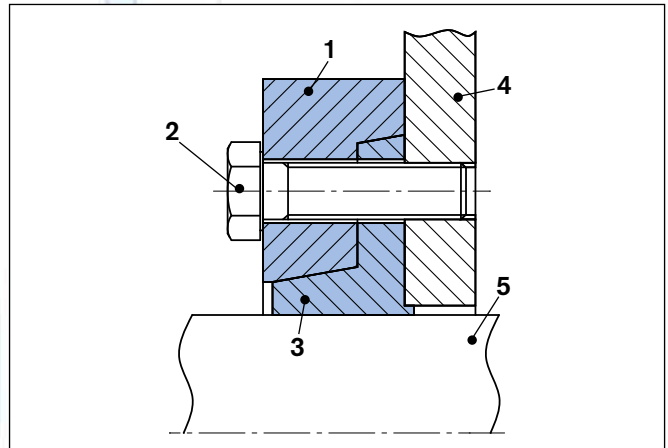
- 1 Outer ring
- 2 Locking screw
- 3 Inner ring
- 4 Attachment part
- 5 Shaft

Part 2, 4, 5 provided by the customer

2-part design with attachment part



RINGFEDER® Shrink Discs RfN 4012



RINGFEDER® Shrink Discs RfN 4022/4023

Detailed installation and removal instructions can be found on our homepage www.ringfeder.com.

Installation and removal instructions

Shrink Discs RfN 4012, 4022, 4023

Installation

1. Clean and degrease position of the shrink disc on the shaft and contact surface of the attachment part.
2. Fasten the attachment part to the shrink disc.
ATTENTION: Tighten the bolts lightly.
3. Sliding the shrink disc onto the shaft.
4. Tighten by uniformly tensioning the bolts in circular sequence, increasing the applied torque stepwise after each sequence. Tension the bolts in sequence (not cross-wise), using a torque wrench.
5. Re-check tightening torque by applying it to all screws all the way around. If all screws have reached the max. tightening torque T_A , the assembly is completed.

Removal

1. Loosen the tensioning bolts evenly and in sequence, again in several circular sequences, to avoid jamming of the discs on the inner ring. Never completely remove the tensioning bolts from their threaded holes, this creates a risk of accidents.
2. Sliding the shrink disc and its attachment part from the shaft. First remove possible traces of rust from the shaft.
3. Releasing the attachment part from the shrink disc.

ISO Tolerances

Shafts

Nominal diameter of shaft		d11		e8		e7		f8		f7		g6		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	- 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		h6		h5		j6		k6		k5		m6		m5		n6		p6	
mm		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
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

Fax Inquiry

To get a design proposal for RINGFEDER® Shaft-hub-connection

RINGFEDER POWER TRANSMISSION USA CORPORATION, Westwood/USA

FAX: +1 201 664 6053

Addresser

Company

Attn. Dept.

Address

Phone Fax

E-Mail

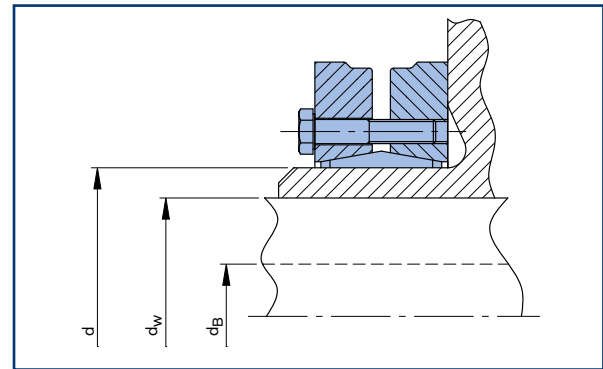
We ask for a consulting discussion. Please call us back under

To make it easy for our technical staff and to avoid errors or mistakes your inquiry should include the following information:

Information for technical service

Expected maximum loads

Max. torque
 Max. bending moment
 Max. axial load
 Max. radial load



T max. = lb-ft
 M_b max. = lb-ft
 F_{ax} max. = lbs
 F_r max. = lbs

Dimensions, materials:

Shaft diameter
 In case of hollow shaft, internal diameter
 Shaft revolution speed
 Inner diameter shrink disc
 Hub width
 Hub material/yield strength
 Shaft material/yield strength
 Temperature of the connection

d_w = inches
 d_B = inches
 n = rpm
 d = inches
 L_N = inches
 $R_{p0,2N}$ = psi
 $R_{p0,2W}$ = psi
 Temp. = degree F

Additional information:

Please send a drawing or sketch together with your inquiry!

RINGFEDER POWER TRANSMISSION USA CORPORATION · 165 Carver Avenue · P.O. Box 691 Westwood · NJ 07675 · USA
 Toll Free: +1 888 746-4333 · Phone: +1 201 666 3320 Fax: +1 201 664 6053
 E-mail: sales.usa@ringfeder.com

Fax Inquiry

To get a design proposal for RINGFEDER® Flange Couplings

RINGFEDER POWER TRANSMISSION USA CORPORATION, Westwood/USA

FAX: +1 201 664 6053

Addresser

Company

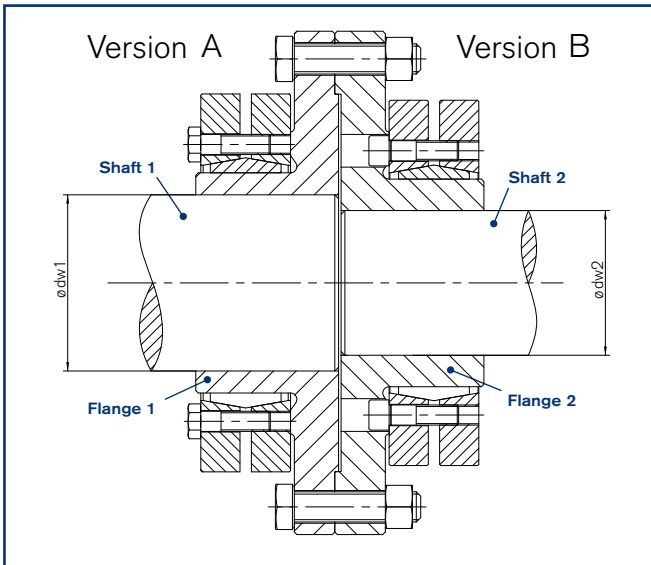
Attn. Dept.

Address

Phone Fax

E-Mail

We ask for a consulting discussion. Please call us back under



Version A

Shaft diameter d_{w1} = inches
 Shaft diameter d_{w2} = inches

Version B

Shaft diameter d_{w1} = inches
 Shaft diameter d_{w2} = inches

Yield point

Material =
 $R_{p0,2W}$ = N/mm²

Expected maximum loads

Max. torque $T_{max.}$ = ft-lbs Max. axial load $F_{ax max.}$ = lbs
 Max. bending moment $M_{bmax.}$ = ft-lbs Max. radial load $F_r max.$ = lbs

Additional information:

Please send a drawing or sketch together with your inquiry!

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 E-mail: sales.usa@ringfeder.com



Locking Devices



Locking Assemblies



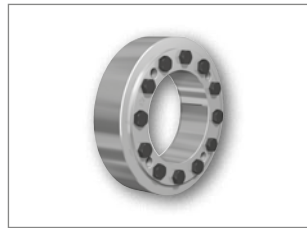
Locking Assemblies for bending moments



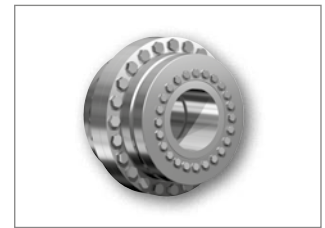
Locking Assemblies – Stainless steel



Locking Elements



Shrink Discs



Flange Couplings

Damping Technology



Friction Springs



DEFORM *plus*®



DEFORM *plus*® R



Couplings



Torsionally Flexible Couplings



Torsionally Flexible Couplings



Torsionally Flexible Couplings



Torsionally Rigid Gear Couplings



Torsionally Rigid Barrel Coupling



Couplings with variable Stiffness



Couplings



Flexible Couplings Henflex



Hydrodynamic Couplings Henfluid



Hydrodynamic Couplings with variable speed

Bearing Housings



Bearing Housings

Remark:

HENFEL products are only available in South America and selected markets.



Couplings



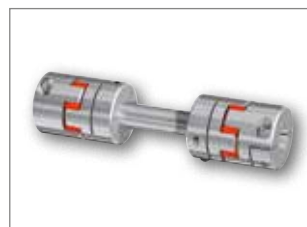
Metal Bellows Couplings



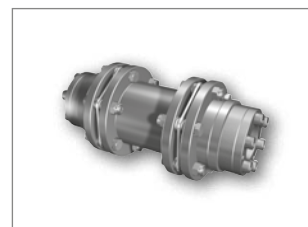
Servo-Insert Couplings



Safety Couplings



Line Shafts



Torsionally Rigid Disc Couplings



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