

Characteristics

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

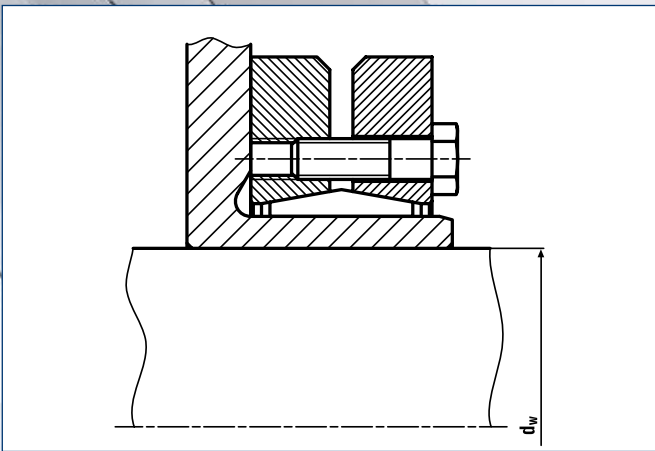
Simplified manufacture – only plain shaft and bore diameters with easily achieved surface finish and tolerances are required.

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

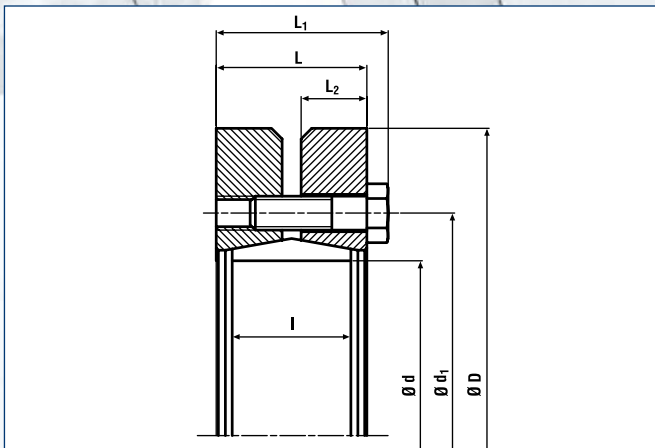
Easy mounting – RINGFEDER® Shrink Discs® use standard screws and tightened using standard tools. No additional machining or fitting work is required.

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

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



Shrink Disc® RINGFEDER® RfN 4071 · Location



Shrink Disc® RINGFEDER® RfN 4071 · Dimensions

Size	Shrink Disc® dimensions											Transmissible torques or axial forces		P	σ_v	Locking screws DIN EN ISO 4014-10.9		Weight lbs	T_{max} lb-ft
	d_w	C_w	d	Ch	D	L_1	L	d_1	L_2	l	T_A	T	F_{ax}			Quantity	Thread		
	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	lb-ft	lb-ft	lbs			psi	n		
220	6.299	0.0031	8.661	+0 -0.0028	14.567	4.488	4.094	10.630	1.850	3.465	184	70068	267512	35960	42775	15	M16x80	119	87585
	6.693											81132	289992						43935
240	6.693	0.0035	9.449	+0 -0.0032	15.945	4.803	4.291	11.614	1.929	3.622	361	88507	329107	39440	44805	12	M20x80	148	110634
	7.480											115059	376540						48430
260	7.480	0.0040	10.236	+0 -0.0035	16.929	5.236	4.724	12.638	2.126	4.055	361	120960	395648	37990	44370	14	M20x90	181	151200
	8.268											151200	451848						47705
280	8.268	0.0035	11.024	+0 -0.0032	18.110	5.787	5.276	13.622	2.362	4.488	361	160051	469832	36395	42775	16	M20x100	225	200063
	9.055											199141	528280						46980
300	9.055	0.0035	11.811	+0 -0.0035	19.094	6.102	5.591	14.331	2.520	4.803	361	202829	546489	35670	42195	18	M20x100	260	253536
	9.646											232331	592573						45240
320	9.449	0.0040	12.598	+0 -0.0035	20.472	6.102	5.591	15.197	2.520	4.803	361	230119	595046	37265	42485	20	M20x100	289	287648
	10.236											275847	651920						46400
340	9.843	0.0044	13.386	+0 -0.0035	22.441	6.654	6.142	16.063	2.795	5.276	361	287648	701151	38280	42775	24	M20x110	410	359561
	10.630											339278	764320						45965
350	10.630	0.0040	13.780	+0 -0.0035	22.835	6.890	6.378	17.008	2.874	5.512	361	326002	736445	35525	41905	24	M20x110	430	407502
	11.220											368780	786800						44515
360	11.024	0.0040	14.173	+0 -0.0035	23.228	6.890	6.378	17.008	2.874	5.512	361	341490	744088	34510	40890	24	M20x110	450	426863
	11.614											385006	794893						43210
380	11.417	0.0044	14.961	+0 -0.0038	25.394	7.205	6.614	18.031	2.992	5.669	620	418197	878968	38135	43500	20	M24x120	527	522746
	12.205											485314	954950						46400
390	11.811	0.0044	15.354	+0 -0.0038	25.984	7.205	6.614	18.425	2.992	5.669	620	460237	935168	39150	44225	21	M24x120	573	575297
	12.598											529568	1008003						47995
400	12.402	0.0044	15.748	+0 -0.0038	26.772	7.205	6.614	18.898	2.992	5.669	620	494165	957648	38135	43790	21	M24x120	617	617707
	12.992											548745	1011600						46980
420	12.992	0.0044	16.535	+0 -0.0038	27.165	7.992	7.402	19.843	3.386	6.457	620	575297	1090280	36395	42775	24	M24x130	697	719121
	13.780											663804	1173456						46690
440	13.386	0.0044	17.323	+0 -0.0038	29.528	8.543	7.953	20.748	3.583	6.969	620	594473	1065552	32335	38715	24	M24x140	900	743092
	14.173											676343	1144232						41325
460	14.173	0.0048	18.110	+0 -0.0038	30.315	8.543	7.953	21.535	3.583	6.969	620	737560	1274616	35960	42485	28	M24x140	926	921950
	14.961											-	1360040						45530
480	14.961	0.0048	18.898	+0 -0.0038	31.496	8.976	8.386	22.441	3.780	7.402	620	862945	1382520	34800	40890	30	M24x140	1114	-
	15.748											966204	1472440						44370
500	15.748	0.0048	19.685	+0 -0.0038	33.465	9.055	8.386	23.228	3.780	7.402	922	967679	1474688	35090	41180	24	M27x150	1268	-
	16.535											-	1557864						45095

Explanations to tables

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

d_w = solid shaft diameter (provided by the customer)

T = transmissible torque

F_{ax} = transmissible axial force

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

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

n = quantity of screws

T_{max} = maximum theoretical transmissible torque

C_w = shaft clearances

C_h = hub tolerances

C_d = shaft tolerances

$|l_1$ = Inner ring centering shoulder length

d_2 = clamped component bore

x = clamped component thickness

B = width dimension, relaxed condition

R_1 = hub max. radius (split Shrink Disc®)

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

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

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 ($\mu_{tot} = 0.1$).
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 30×10^6 PSI. (Lower values result in increased values for T and F_{ax} with reduced tangential stress.)

The maximum clearance is being fully utilized.

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

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



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