

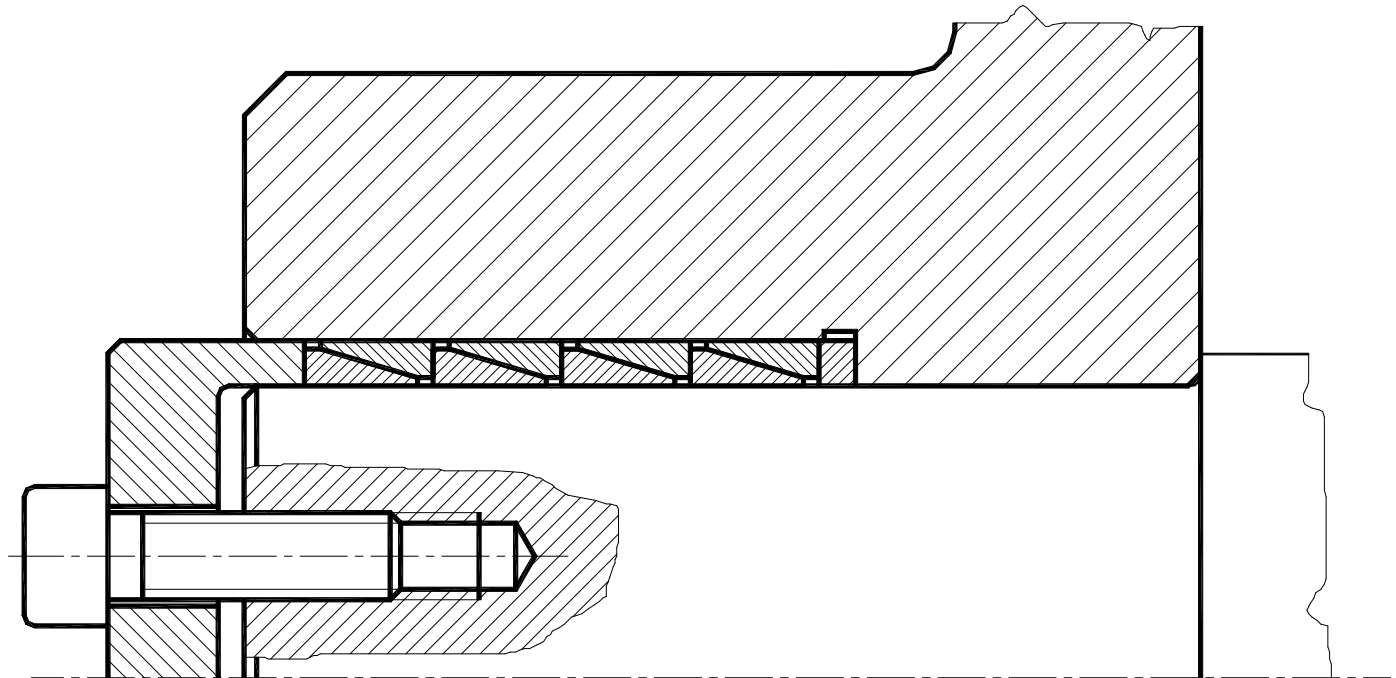
Kötés közvetítőelemekkel

Kúpos kötések

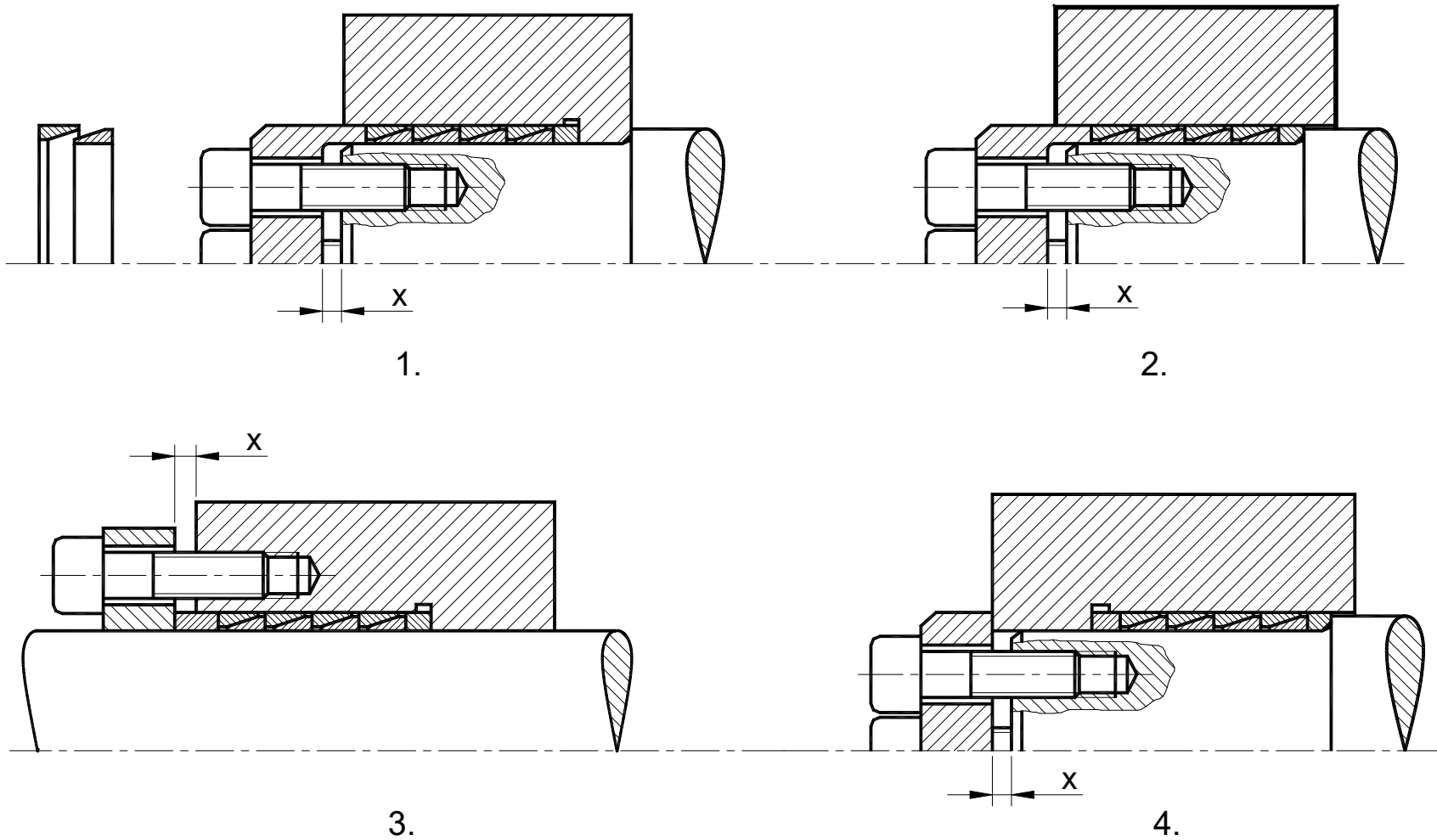
Borbás Lajos

Prof. Emeritus

Kúpos gyűrűpárok

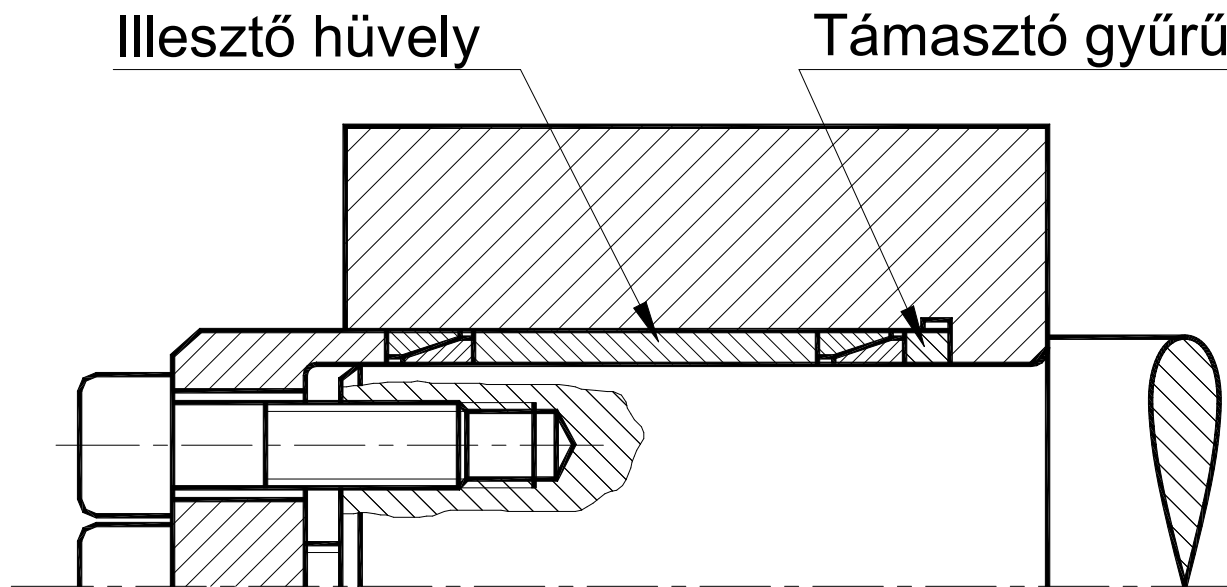


Kúpos gyűrű párok beépítése



Az ábrán x-el bejelölt sajtolási utat elegendően nagyra kell megválasztani.

Konstrukciós irányelvek

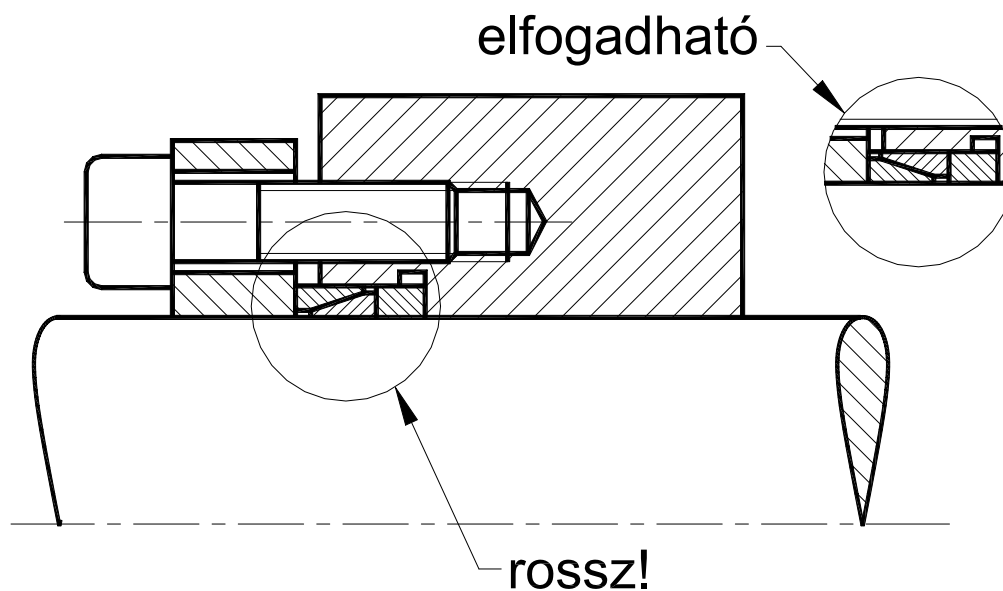
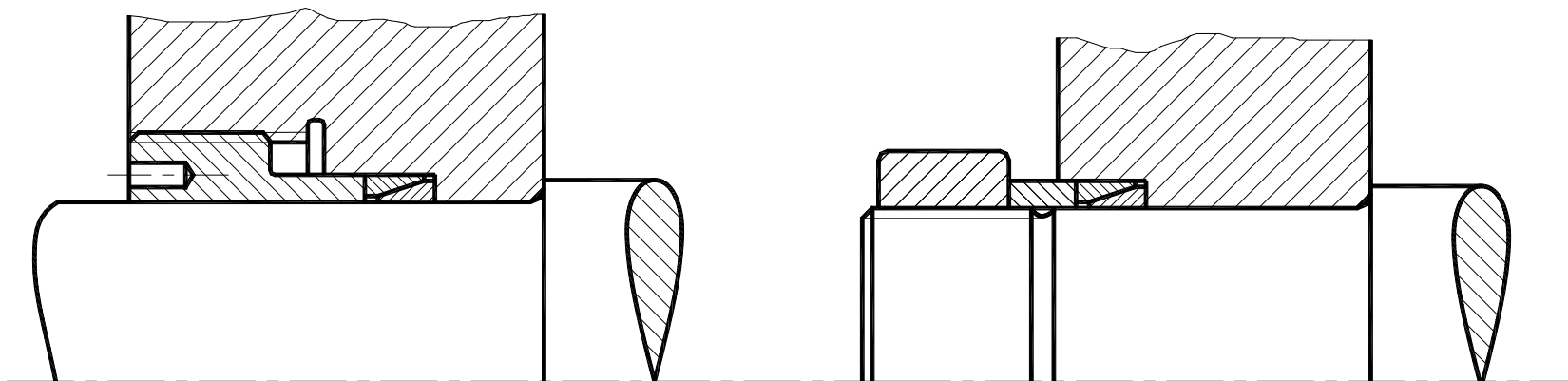


Az ábrán mutatjuk meg a támasztógyűrű alkalmazását, amelyre a lépcsős agyfurat miatti alászúrás áthidalására van szükség.

A hengeres illesztési átmérők ajánlott ISO tűrése: 40 mm-ig H7/h7 a felett H8/h8 .

Felületi érdesség a gyűrűkkel illeszkedő hengerfelületeken $Ra = 3,2 \mu\text{m}$.

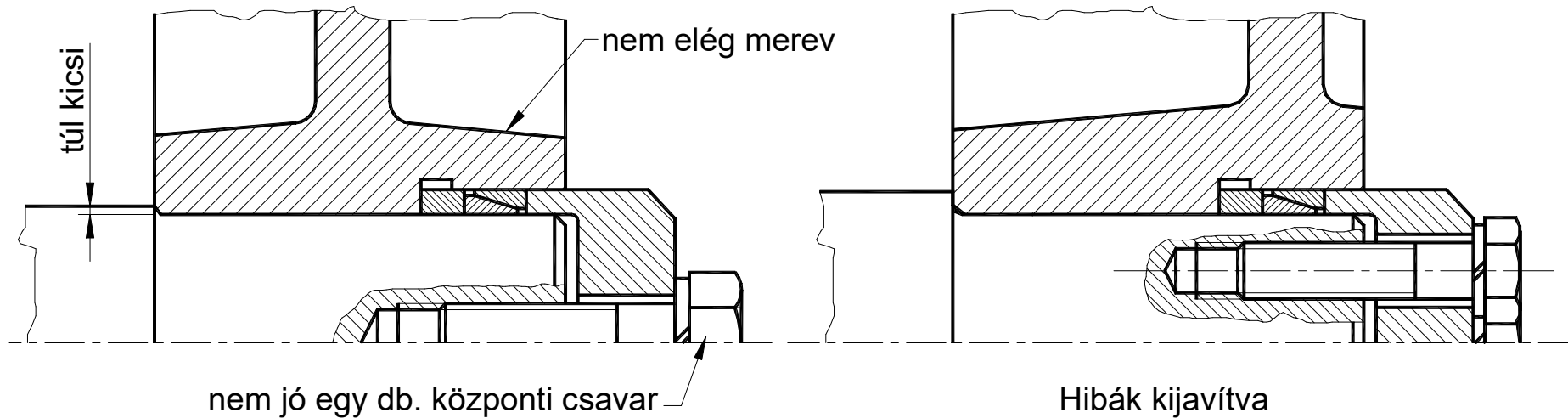
Hibás konstrukciók



1. Túl nagy szerelési nyomaték kell!

2. Külső gyűrű kitölcséresedik

Hibák itt is



Ne alkalmazzunk túl sok gyűrűpárt! Ezt az irányelvet a későbbiekben részletesen indokoljuk.

Alkalmazzunk minél több készen kapható alkatrészt, úgymint illesztő gyűrűket, feszítő karimákat, feszítő tárcsákat.

Írjuk elő az összeállítási rajzokon a karimacsavarok meghúzási sorrendjét, amely átlós legyen!

Vektorábrák

$$R_1 = F_{v1} \frac{\cos(\alpha + \rho)}{\sin(\alpha + 2\rho)} \cos \rho$$

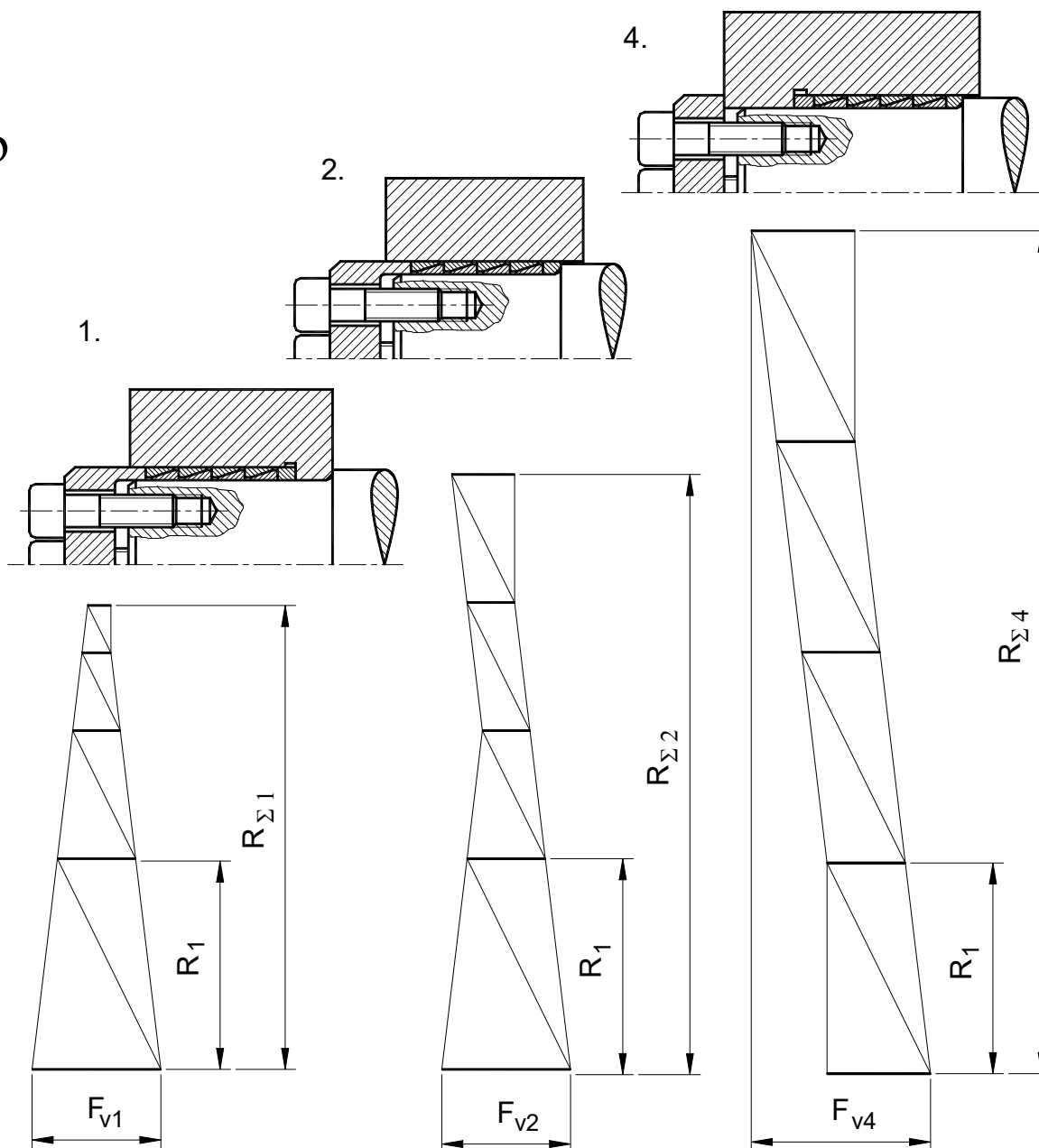
$$T_1 = \mu R_1 \frac{d}{2}$$

$$T_s = T_1 \frac{i_{d\text{ ax}}^n - 1}{i_{d\text{ ax}} - 1}$$

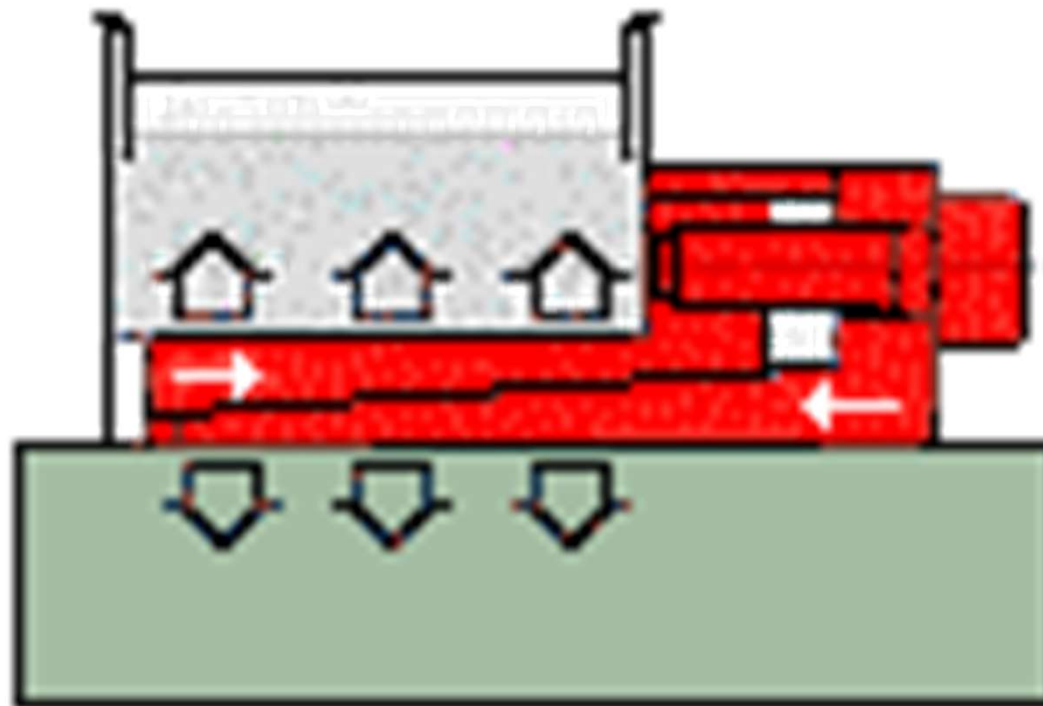
$$T_s = T_1 (1 + 3 i_{d\text{ ax}})$$

$$T_s = T_1 n$$

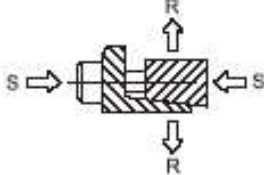
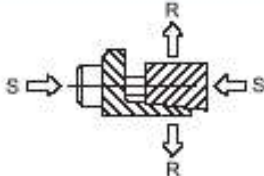
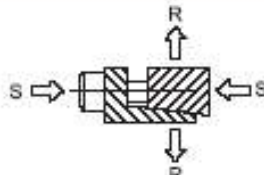
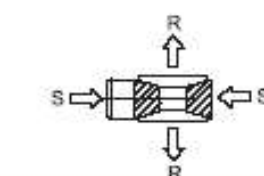
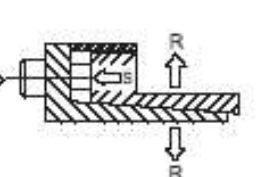
$$i_{d\text{ ax}} = \frac{F_2}{F_1} = 1 - 2 \frac{\cos(\alpha + \rho)}{\sin(\alpha + 2\rho)} \sin \rho$$



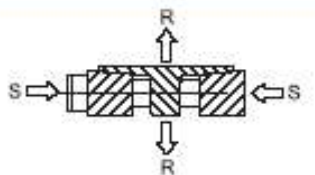
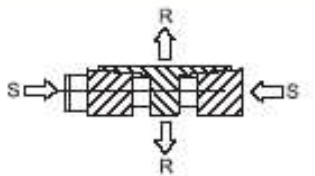
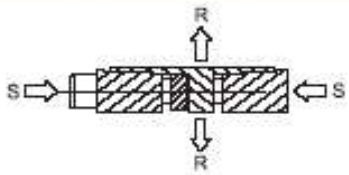
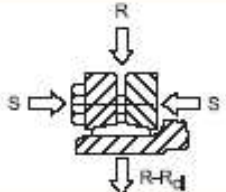
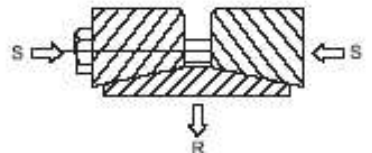
Kúpos perselyek működési elve



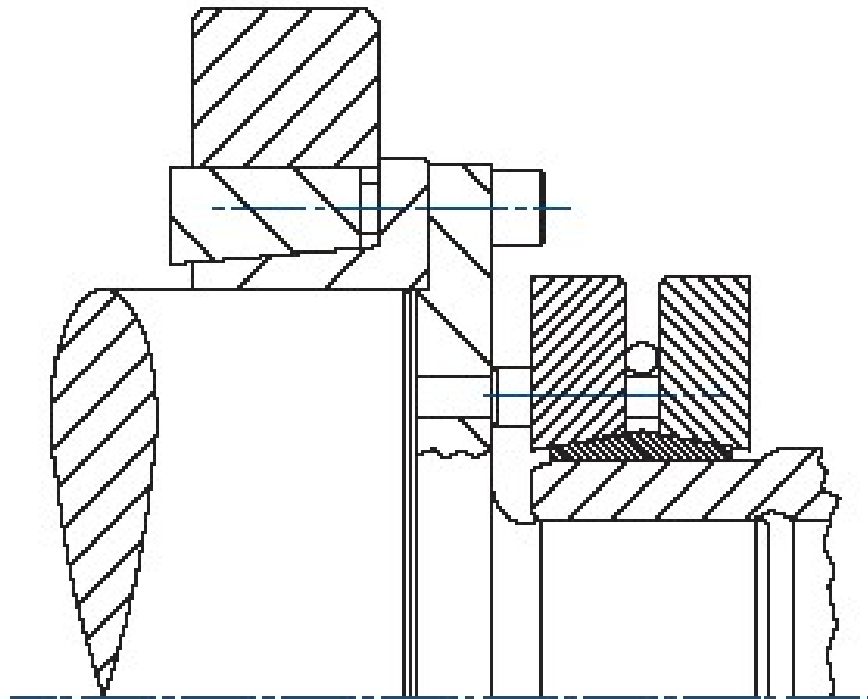
Kúpos gyűrűk

		$R = \frac{S}{\tan(\alpha + \gamma) + \mu}$	$M_t = R \mu \frac{d}{2}$	$p = \frac{R}{d\pi L}$	$p_H = \frac{R}{D\pi L}$
		$R = \frac{S}{\tan(\alpha + \gamma) + \mu}$	$M_t = R \mu \frac{d}{2}$	$p = \frac{R}{d\pi L}$	$p_H = \frac{R}{D\pi L}$
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		$R = \frac{S}{\tan(\alpha + \gamma) + \mu}$	$M_t = R \mu \frac{d}{2}$	$p = \frac{R}{d\pi L}$	$p_H = \frac{R}{D\pi L}$

Szorítógyűrűk

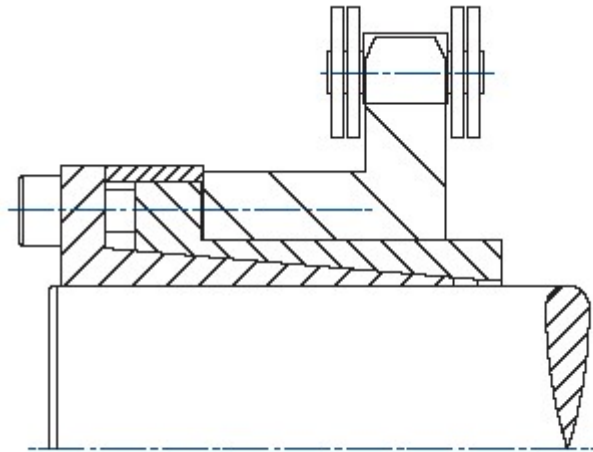
	 $R = \frac{2 S}{\tan(\alpha + \gamma) + \mu}$ $M_t = R \mu \frac{d}{2}$ $p = \frac{R}{d\pi L}$ $p_H = \frac{R}{D\pi L}$
	 $R = \frac{2 S}{\tan(\alpha + \gamma) + \mu}$ $M_t = R \mu \frac{d}{2}$ $p = \frac{R}{d\pi L}$ $p_H = \frac{R}{D\pi L}$
	 $R = \frac{2 S}{\tan(\alpha + \gamma) + \mu}$ $M_t = R \mu \frac{d}{2}$ $p = \frac{R}{d\pi L}$ $p_H = \frac{R}{D\pi L}$
	 $R = \frac{2 S}{\tan(\alpha + \gamma)}$ $M_t = (R - R_{cl}) \mu \frac{d}{2}$ $p = \frac{(R - R_{cl})}{d\pi L}$
	 $R = \frac{2 S}{\tan(\alpha + \gamma)}$ $M_t = R \mu \frac{d}{2}$ $p = \frac{R}{d\pi L}$

Beépítési példa

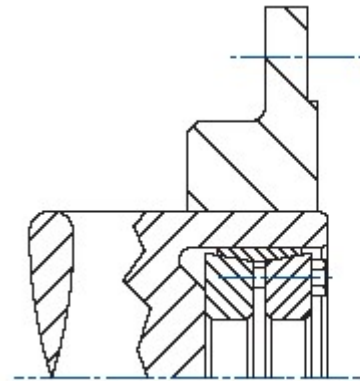


Series B106 with outer reinforcing collar used as mounting flange for hollow-shaft hydraulic drive with quill bore that is substantially smaller than driven shaft diameter. Shrink Disc used to mount mating adaptor flange to motor.

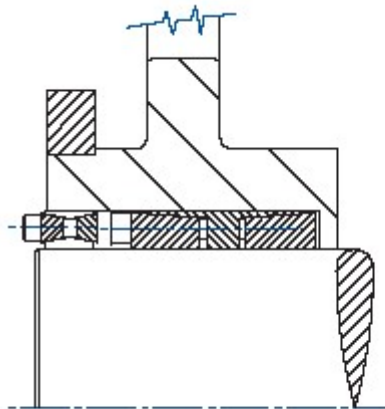
Beépítési példák



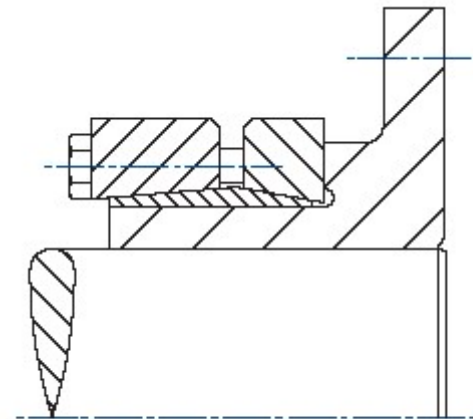
B800 used to mount B-type roller chain sprocket with relatively small hub OD.



Inverted Shrink Disc connects coupling flange to counterbored shaft; shaft strength reduction surprisingly low.

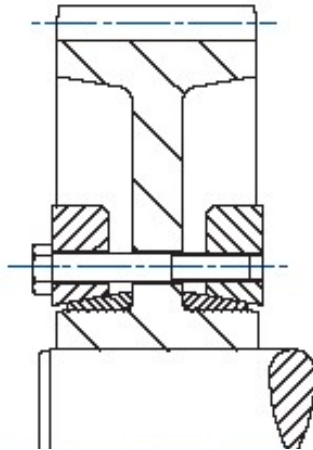


Series B400 and Series B112 used in series for gear with wide hub. Relatively thin hub cross section can be reinforced with steel collar.



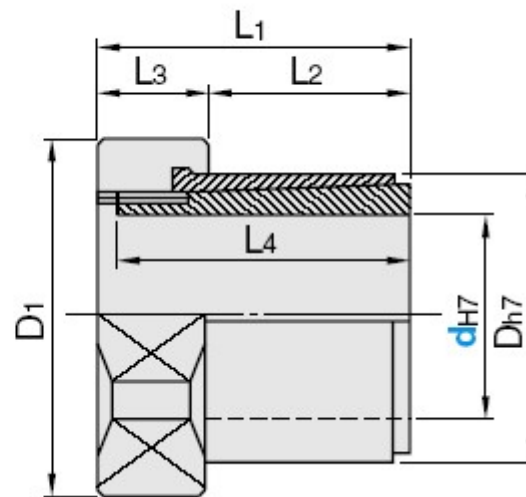
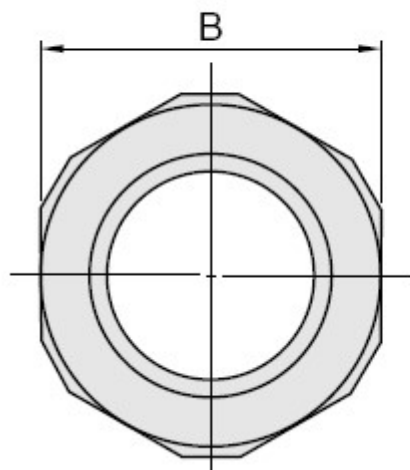
Modified Shrink Disc for mounting disc-type flexible coupling flange in application where low WR^2 value is critical.

Beépítési példák

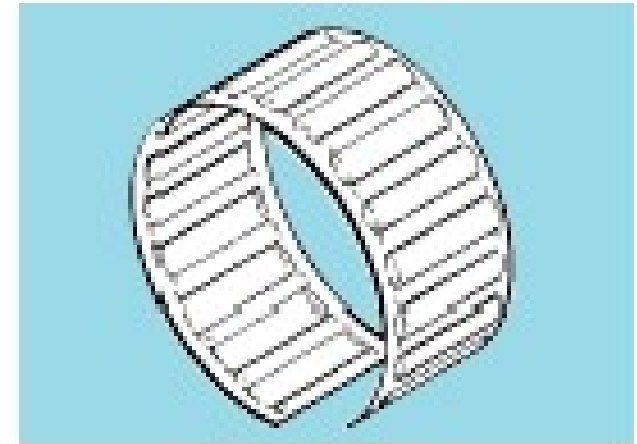
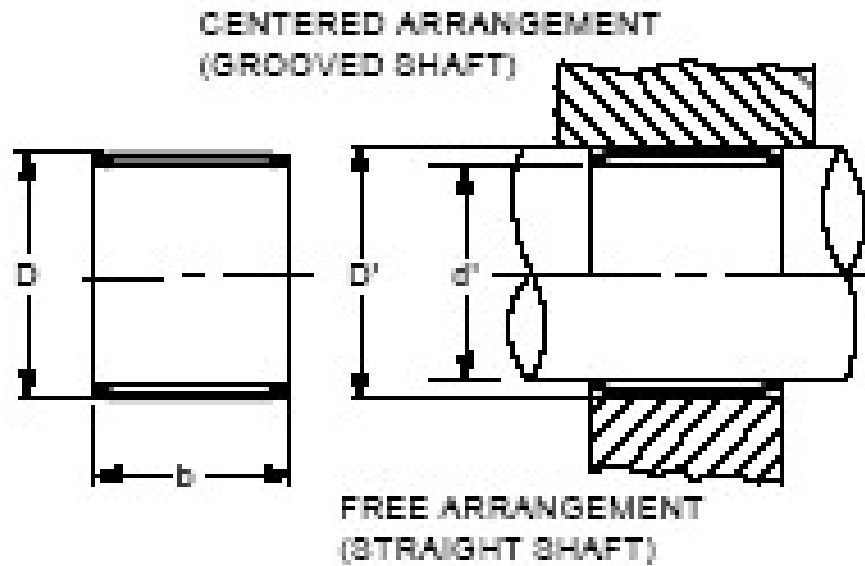


Typical Split
Shrink Disc
arrangement.

(stainless nickel plating)

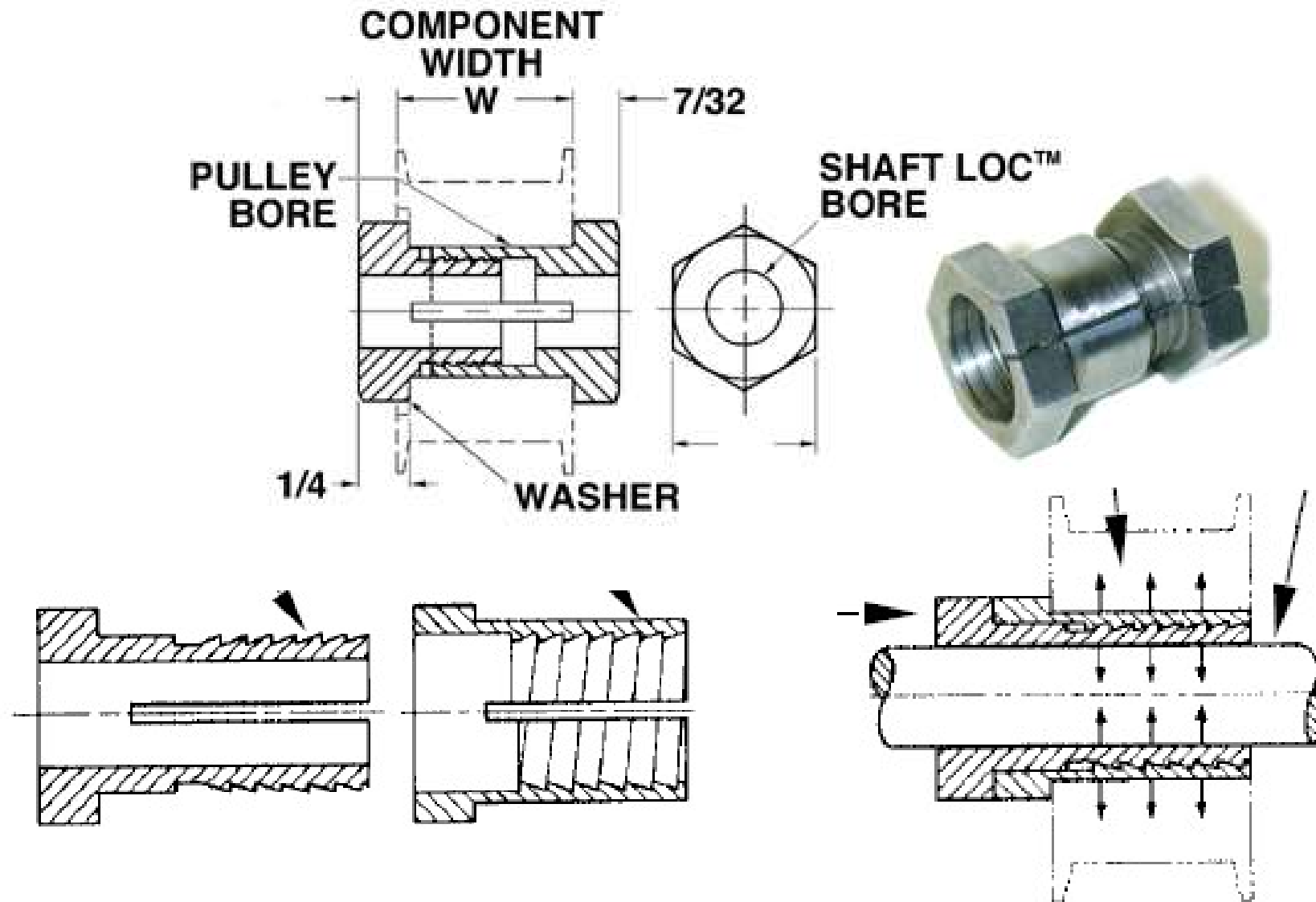


Star ring



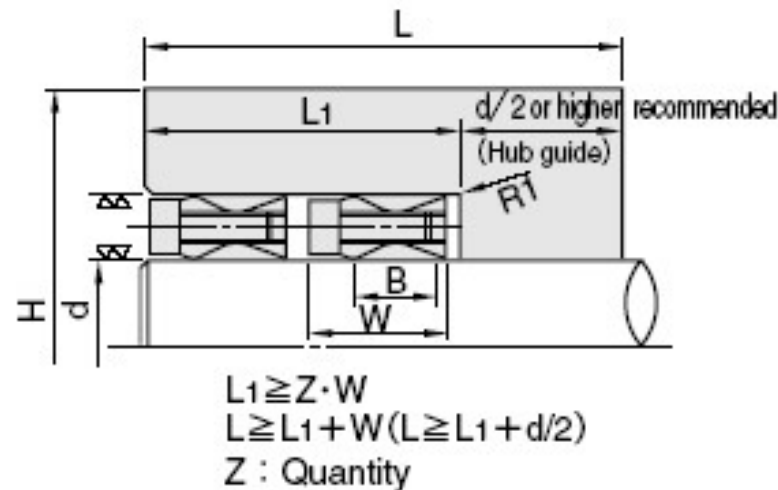
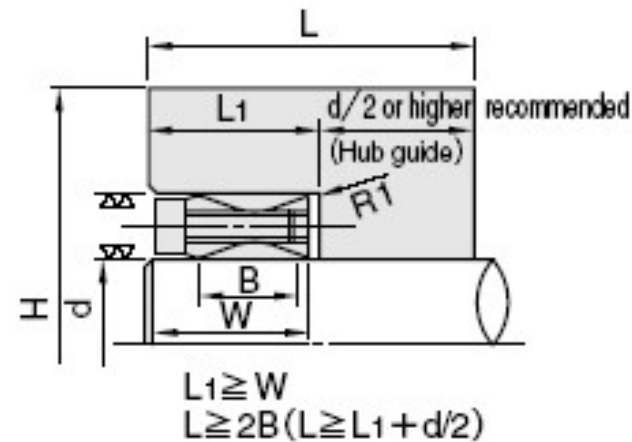
<https://sdp-si.com/eStore/Direct.asp?GroupID=665>

Kúpos menet

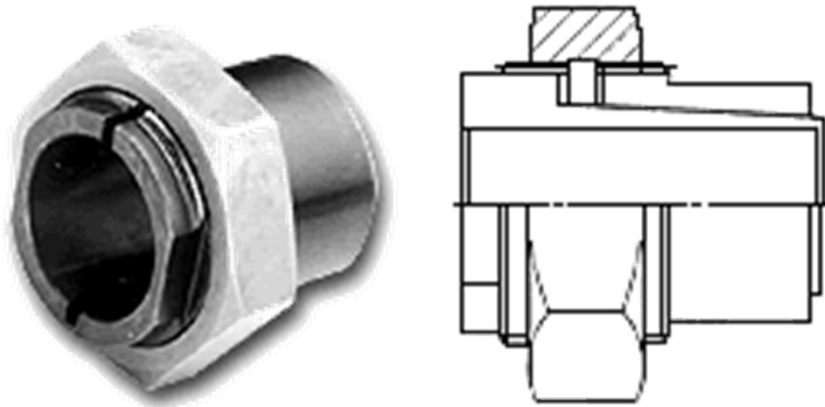


Kétkúpos gyűrű

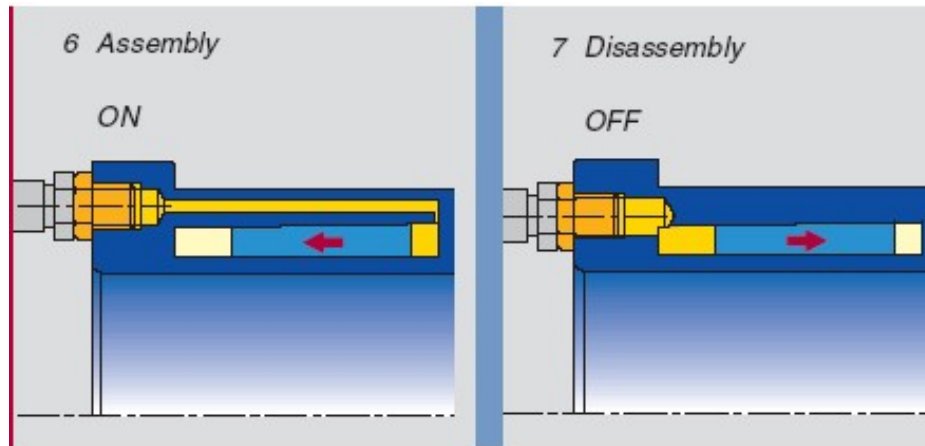
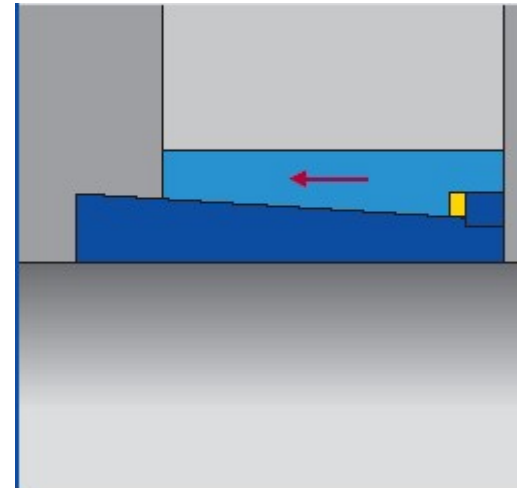
<http://www.misumiamerica.com/products/doProcess?class=Product&method=view&MIID=421>



Diferenciál menet, hidraulika alkalmazása



<http://www.bikon.de/german/produkte/index.html>

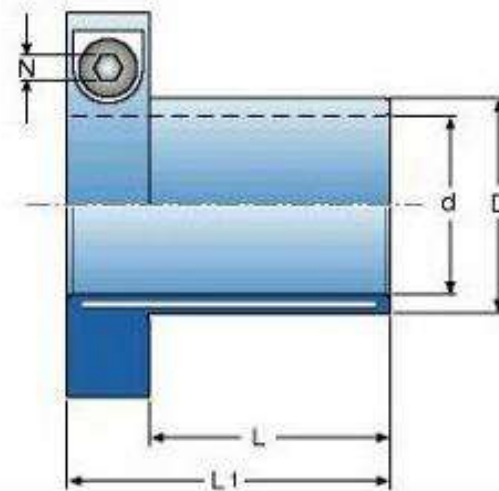
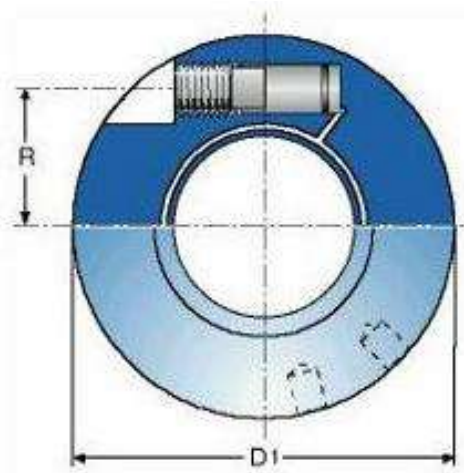
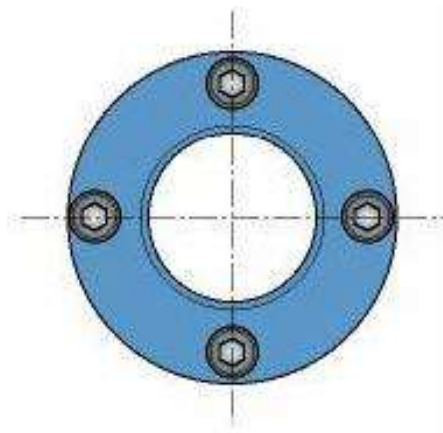
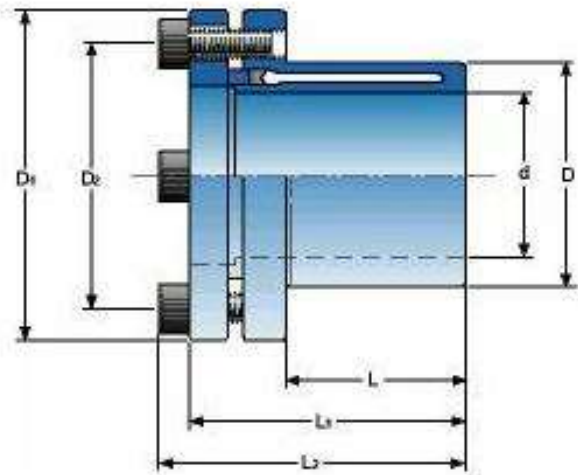


Hycon®

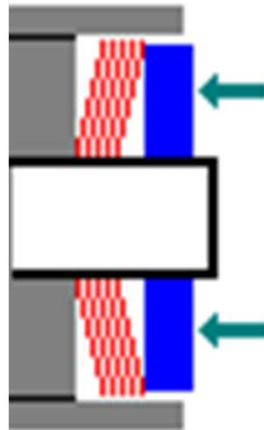
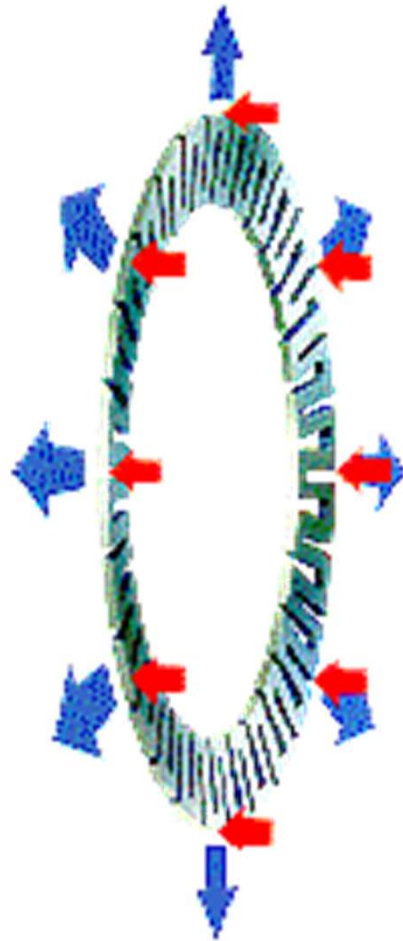
Mechanical shaft-hub connection which is hydraulically set or released. The power transmission does not require oil pressure.

<http://www.sitsa.es/adm/productos/catalogos/hylocpaginas.pdf>

Hidraulikus persely



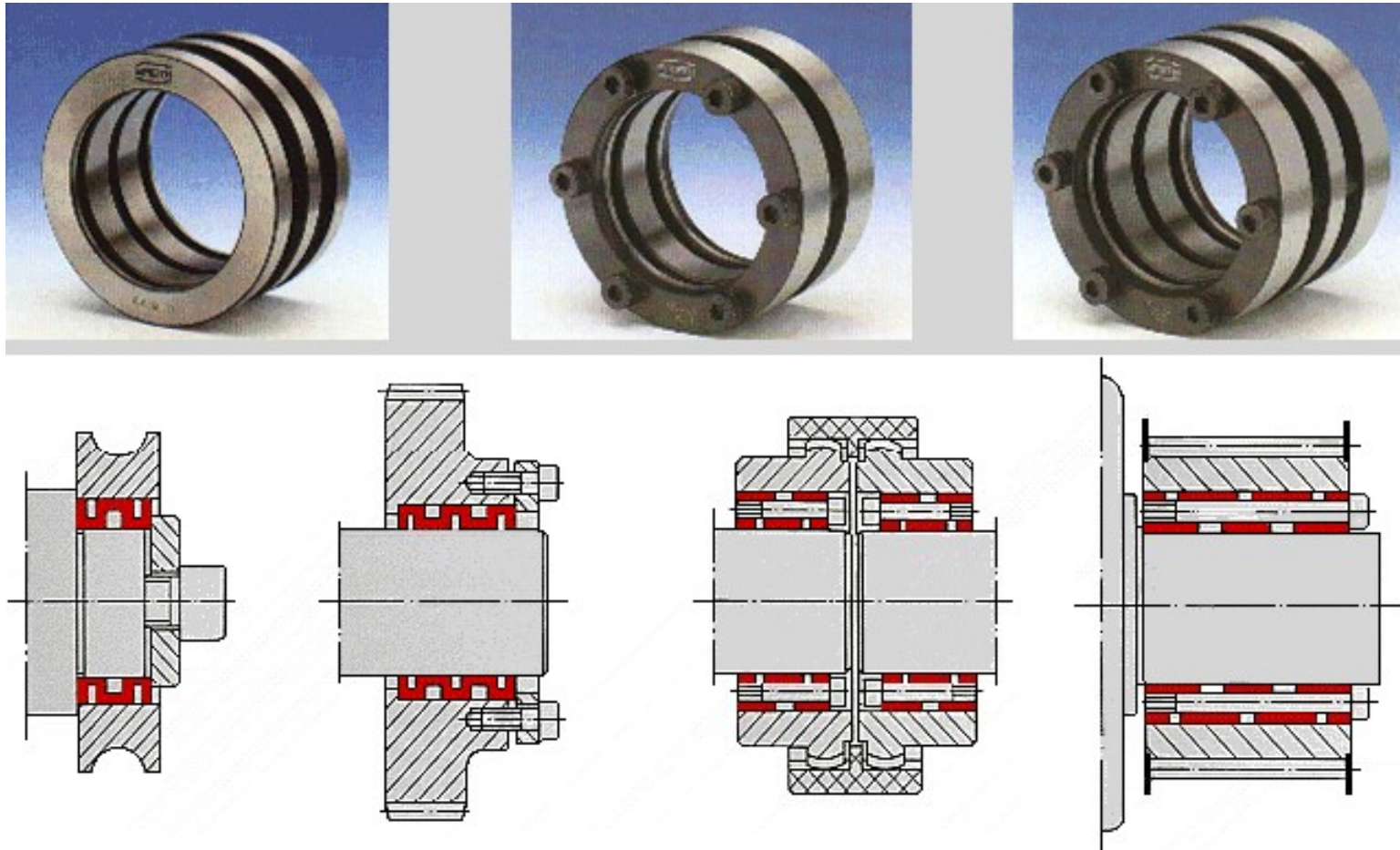
Csillagtárcsás nyomatékötés



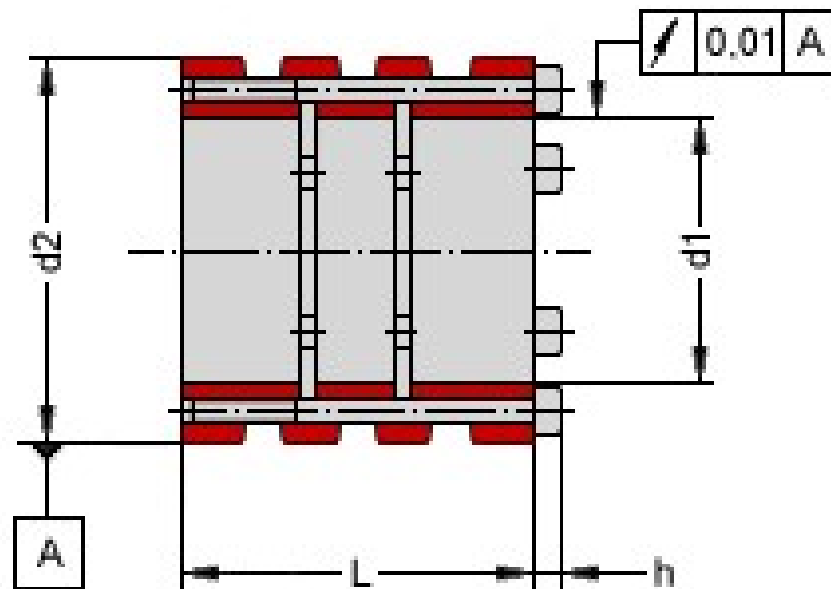
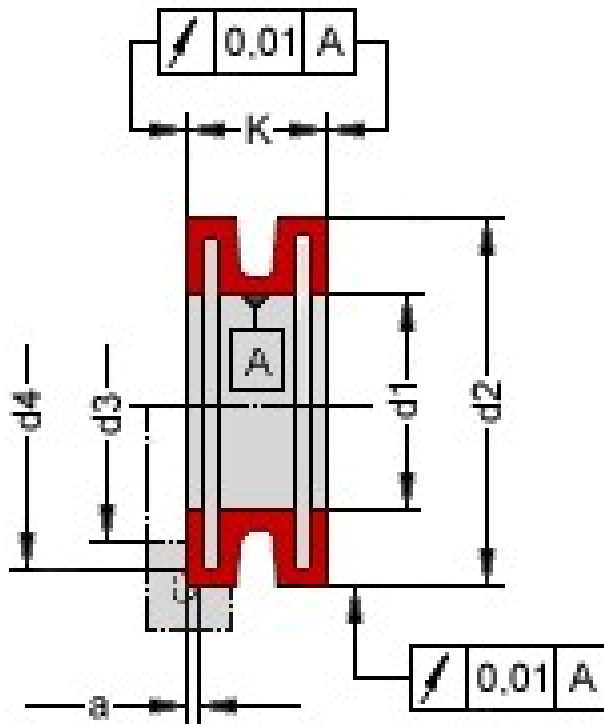
Clamping disc: Inner diameter as required

- extremely elastic
- no operation limit (clamp-loose)
- bonded discs as package available
- shaft diameter from 7 up to 170 mm
- torque up to 560 Nm per disc

Spieth persely alkalmazása

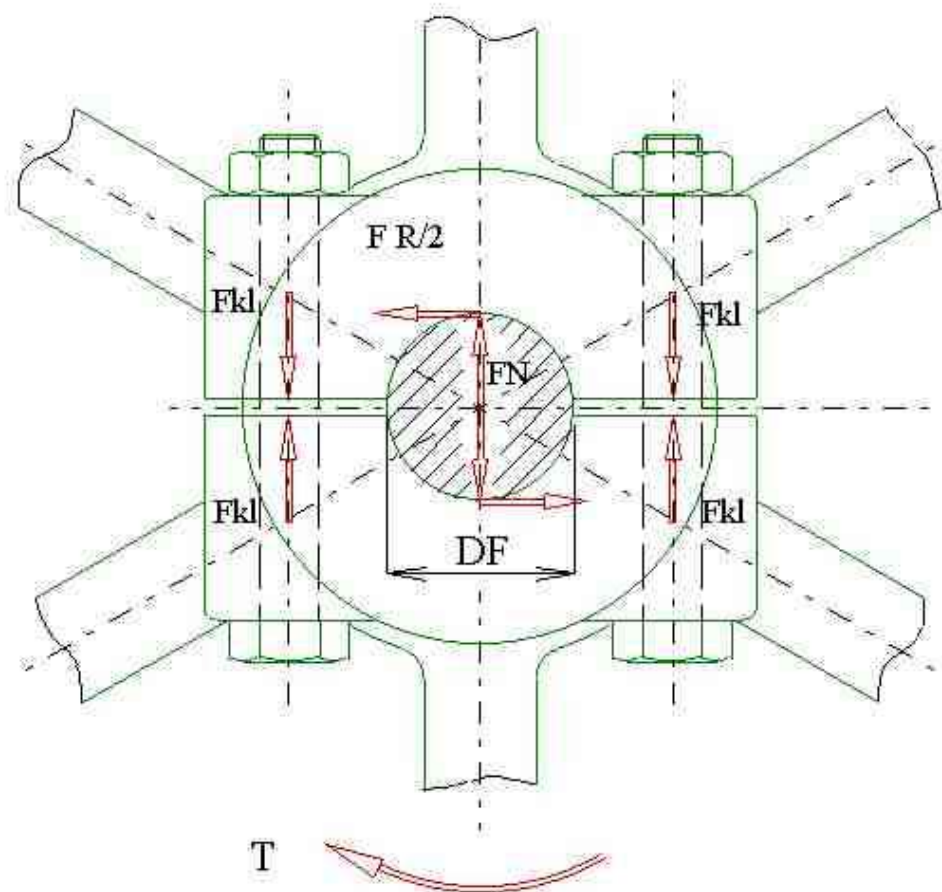


Spieth perselyek



Tangenciális befeszítés

Geteilte Scheibennabe



Hasított kar felerősítés

Geschlitzte Hebelnabe

