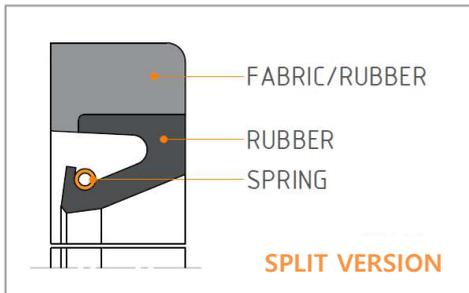
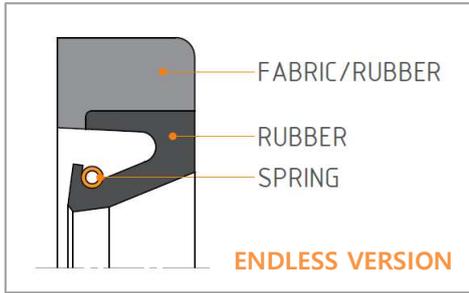


# CARCOSEAL/UN

Fabric rubber radial lip seal for rotary applications



## FEATURES AND BENEFITS

- Most popular radial lip seal at Carco.
- Recommended for the majority of heavy duty applications.
- Manufactured by molding together the rubber lip and the back section in fabric reinforced rubber.
- Shaft-to-bore misalignment and dynamic run-out are absorbed by the toroidal garter spring.
- The seal requires a housing with a retaining plate.
- Easy fitting, eliminating risk of housing or seal damage during installation.
- Static tightness between seal and housing.
- Dedicated elastomeric compounds with special additives to reduce torque, heat generation and rubber aging.
- Engineered lip profile to minimize radial contact pressure and shaft wear.
- Stainless steel garter spring for a wide range of applications.
- Special lip coating in PTFE called "Carcoflon" to avoid stick-slip after long static contact with metal parts and to reduce the frictional torque.
- SPLIT version** : no shaft removal needed; no leakage assured by the two rubber-to-rubber ends in the seal (no pressure applications).

## MATERIALS & WORKING CONDITIONS

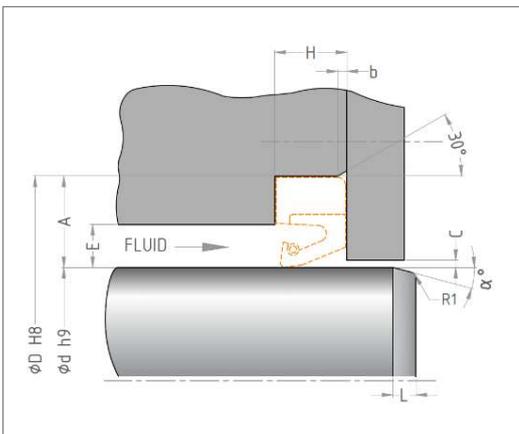
Material	Elastomer Type	Working Temperature		Peak Temperature		Max. Speed		Max. Pressure	
		[°C]	[°F]	[°C]	[°F]	[m/s]	[ft/min]	[bar]	[psi]
S820	NBR + Cotton + PTFE coating	-20 ... +100	-4 ... +210	-30 / +120	-22 / +250	15	3000	0,5	7
LT820	Low temp NBR+ Cotton + PTFE coating	-30 ... +90	-22 ... +200	-45 / +110	-50 / +230	10	2000	0,5	7
HT720N	HNBR + Cotton + PTFE Coating	-20 ... +100	-4 ... +210	-30 / +120	-22 / +250	20	4000	0,5	7
HT720	HNBR + Cotton + PTFE coating	-30 ... +140	-22 ... +280	-40 / +160	-40 / +320	25	5000	0,5	7
Z420	FKM + Cotton + PTFE coating	-20 ... +150	-4 ... +300	-30 / +170	-22 / +340	25	5000	0,5	7
Z590	FKM High grade + Aramid reinforcement + PTFE coating	-10 ... +180	+15 ... +360	-15 / +200	+5 / +400	25	5000	0,5	7

\* Peak temperatures are respectively the lowest admissible survival temperature in static conditions and the highest admissible under-lip temperature.

\* Alternative materials are available on demand.

\* Alternative reinforcement materials are available on demand, such as KEVLAR® and NOMEX®.

\* Standard spring : AISI302 / Alternative spring : AISI316, Duplex, Monel and encapsulated spring.



\* All edges rounded and burr-free.

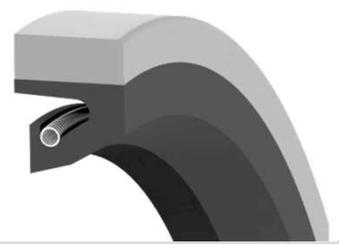
## INSTALLATION & RECOMMENDED DIMENSIONS

Carcoseal/UN requires an axially accessible housing with a retaining plate. When bolted in position the plate exerts adequate axial compression on the shoulder of seal, ensuring an efficient static tightness. For this reason the Carcoseal/UN is supplied with an oversized diameter and height.

Shaft Ød [mm]	H x A [mm]	b [mm]	E max [mm]	C max [mm]	H [mm]	L x α [mm] x [°]
100 ... 250	16 x 20	2,0	9,0	4,0	16 +0/-0,1	7 x 20°
250 ... 400	20 x 22	2,2	11,0	6,0	20 ±0,1	9 x 20°
400 ... 600	22 x 25	2,5	11,0	7,0	22 ±0,1	10 x 20°
600 ... 800	25 x 32	3,2	14,0	8,0	25 ±0,1	11 x 20°
800 ... 1200	25 x 32	3,2	14,0	8,0	25 ±0,1	12 x 20°
1200 ... 1500	25 x 32	3,2	14,0	8,0	25 ±0,1	14 x 20°
> 1500	25 x 32	3,2	14,0	8,0	25 ±0,1	15,5 x 20°

# CARCOSEAL/UN

## Fabric rubber radial lip seal for rotary applications



### SHAFT SURFACE RECOMMENDATIONS

Shaft Speed [m/s]	Ra [μm]	Rt [μm]	Min. Hardness [HRC]
0 ... 8	0,2 ... 0,8	1,0 ... 4,0	35
8 ... 16	0,2 ... 0,6	1,0 ... 2,5	45
16 >	0,2 ... 0,4	0,8 ... 1,5	55

For the shaft diameter we recommend tolerance h9 but also h11 can be applied. A proper shaft finish is essential for the performance as well as for the life of the seal. As the shaft speed increase the hardness of the shaft have to be increased in combination with a better surface roughness.

### HOUSING REQUIREMENTS

It is important that the housing surface is finished smooth and free from longitudinal scratches which could provide a leakage path. Housing bore surfaces and flange in contact with the static side of the seal must have the following surface roughness requirements :

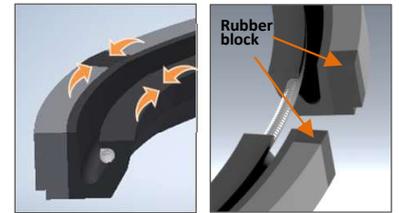
$Ra < 4 \mu m - Rt < 16 \mu m$

Also a generous lead-in chamfer in the housing has to be created to facilitate the fitting. The retaining flange and fixing bolts have to be designed appropriately. Please ask for the proper design guideline.

### SPLIT VERSION

When shaft removal is impractical and downtime is critical, Carcoseal/UN can be supplied in split version (Carcoseal/UN/SPLIT). To ensure effective sealing at the split ends, a short full rubber section is molded at the seal ends, so that the contact between homogeneous elastic surface maximizes the sealing effect (rubber lock). Attention must be paid when the fluid is under a certain amount of pressure or when there are severe dynamic conditions. In such cases, we recommend to join on site the seal with our dedicated ISP or CSP kit.

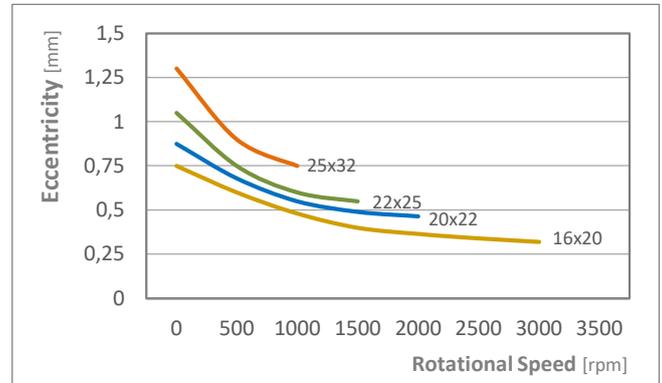
- "ISP" kit for individual gluing = split seal name Carcoseal/UN/ISP
- "CSP" kit for multiple gluing = split seal name Carcoseal/UN/CSP



### ECCENTRICITY LIMITS

The total eccentricity, to which is subjected a radial lip seal, is the sum of two components :

- **Shaft-to-bore misalignment (Static eccentricity) :**  
Distance between the geometric center of the shaft and the geometric center of the seal housing bore.
- **Shaft dynamic run-out (Dynamic eccentricity) :**  
Distance between the geometric center of the shaft and the axis of rotation.



### PRODUCT IDENTIFICATION

CARCOSEAL / UN / (SPLIT) / S820

340,0/384,0 x 20,0

Housing nominal dimension

Material

ENDLESS/SPLIT version  
Only "SPLIT" indicated

Seal model



March 2023

**NOTE :** All data and information in this datasheet is based upon years of experience in the manufacture and application of sealing element and is given in good faith. In spite of all efforts on our part, suggestions included here cannot be regarded as generally binding because of the various unknown factors which arises in particular application. Data are subject to change without notice. The operating conditions indicates in the datasheet are given as indication and have to be verified in case of concomitance.