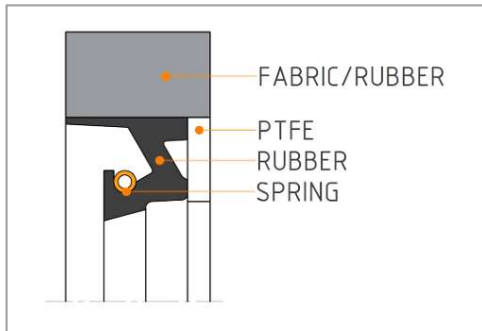


CARCOSEAL/AP

Fabric rubber radial lip seal for rotary applications with pressure



FEATURES AND BENEFITS

- Designed to support the lip against pressure with a PTFE back-up ring integrated in the seal.
- The PTFE back-up ring provides correct support to the seal lip when the metal retaining plate could not support it correctly.
- Recommended for critical applications with moderate fluid pressure : marine, hydropower, pressurized bearings and process fluid retention system in pumps and mixers.
- 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.
- 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 called "Carcoflon" to avoid stick-slip after long static contact with metal parts and to reduce the frictional torque.
- No split version available.

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	5	70
HT720	HNBR + Cotton + PTFE coating	-30 ... +140	-22 ... +280	-40 / +160	-40 / +320	25	5000	5	70
Z420	FKM + Cotton + PTFE coating	-20 ... +150	-4 ... +300	-30 / +170	-22 / +340	25	5000	5	70
Z590	FKM High grade + Aramid reinforcement + PTFE coating	-10 ... +180	+15 ... +360	-15 / +200	+5 / +400	30	6000	5	70

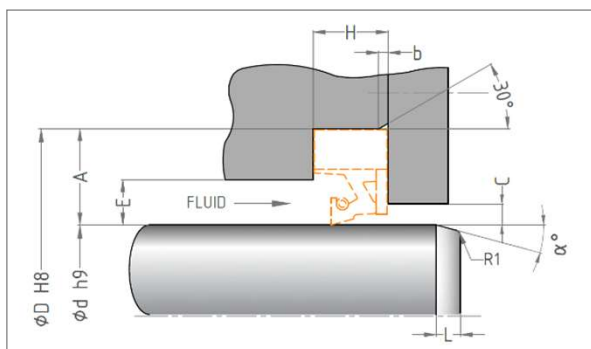
* Pressure and speed combination is an important factor for the seal life. Please refer to the PV limits table.

* 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 : AISI316 / Alternative spring : Duplex (MX), Monel (MK) and encapsulated spring (MP).



INSTALLATION & RECOMMENDED DIMENSIONS

Carcoseal/AP 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/AP is supplied with an oversized diameter and height.

* All edges rounded and burr-free.

Shaft Ød [mm]	H x A [mm]	b [mm]	E max [mm]	C max [mm]	H [mm]	L x α [mm] x [°]
< 50	10 x 11	1,2	5,0	1,0	10 +0/-0,1	5 x 20°
50 ... 100	12,5 x 16	1,5	7,0	1,0	12,5 +0/-0,1	6 x 20°
100 ... 250	16 x 20	2,0	9,0	2,0	16 +0/-0,1	7 x 20°
250 ... 400	20 x 22	2,2	11,0	2,0	20 ±0,1	9 x 20°
400 ... 600	22 x 25	2,5	11,0	3,0	22 ±0,1	10 x 20°
600 ... 800	25 x 32	3,2	14,0	3,0	25 ±0,1	11 x 20°
800 ... 1200	25 x 32	3,2	14,0	3,0	25 ±0,1	12 x 20°
> 1200	25 x 32	3,2	14,0	3,0	25 ±0,1	14 x 20°

CARCOSEAL/AP

Fabric rubber radial lip seal for rotary applications
with pressure



SHAFT SURFACE RECOMMENDATIONS

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

Note – Ceramic Coating

When a ceramic coating is used, its abrasive nature and different roughness characteristics require special consideration. Please contact our technical department for special recommendations

HOUSING REQUIREMENTS

It is important that the bore housing 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 :

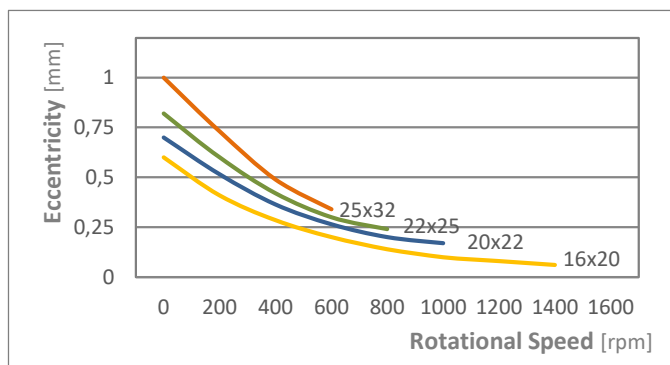
$Ra < 4 \mu m - Rt < 16 \mu m$

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

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.



PV FACTOR, OPERATION LIMITS

Carcoseal/AP has to work in a specific range of PV (Pressure multiplied by Speed). The maximum PV value is indicated in the table on the right side.

For example, Pressure= 1,5 bar; Speed= 4 m/s, give a PV factor = 6

Material	Maximum PV value	
	[bar] x [m/s]	[psi] x [ft/min]
S820	3,0	8400
HT720	4,5	12600
Z420	5,7	15960
Z590	7,0	19600

PRODUCT IDENTIFICATION

CARCOSEAL / AP - S820

340,0/384,0 x 20,0

Housing nominal dimension

Material

Seal model



RevC March 2026

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.