

Description of standard shaft seal types (in accordance with DIN 3760)



A Rubber covered O.D., metal insert, sealing lip with garter spring



AS Rubber covered O.D., metal insert, sealing lip with garter spring and additional dust lip



B Outer metal case, sealing lip with garter spring



BS Outer metal case, sealing lip with garter spring and additional dust lip




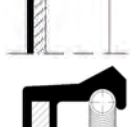

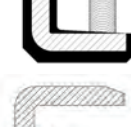



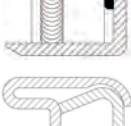




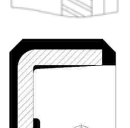

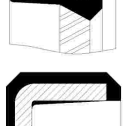







C Outer metal case with reinforcing metal inner ring, sealing lip with garter spring



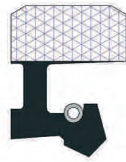
CS Outer metal case with reinforcing metal inner ring, sealing lip with garter spring and additional dust lip

Additional types

- | | | | |
|--|---|---|--|
|  | A - P Reinforced sealing lip for overpressure |  | A - EC End covers |
|  | AS - P Reinforced sealing lip for overpressure, with additional dust lip |  | A - TE Rubber covered I.D. and sealing lip on O.D. |
|  | AS - PX Reinforced sealing lip and special metal insert for overpressure, with additional dust lip |  | B - O Outer metal case, sealing lip without spring |
|  | A - DUO Twin sealing lip with two garter springs |  | B - TE Inner metal case and sealing lip on O.D. |
|  | A - O Sealing lip without spring |  | C - DUO Outer metal case with reinforcing cap, twin sealing lip with two garter springs |
|  | A - FL Different spring groove for a better spring retention |  | COMBI SEAL
Combination of a shaft seal and an additional seal in polyurethane against soiling in one housing |
|  | A - LD Sealing lip with hydrodynamic ribs, left rotation |  | CASSETTE SEAL
Integrated sealing system: oil seal, wear sleeve and dust protection in one unit. |
|  | A - RD Sealing lip with hydrodynamic ribs, right rotation |  | RADIASEAL
Rotary shaft seal with fabric reinforced outer diameter. See pag 18 |
|  | A - WD Sealing lip with bidirectional hydrodynamic ribs |  | SPLITRING
Rotary shaft seal without metal insert, split. See pag 20 |
|  | A - X7 Wavy rubber covered O.D., metal insert, sealing lip with garter spring |  | DINA Seal
Rotary shaft seal for needle bearing applications. See pag 21 |
|  | AS - X7 Wavy rubber covered O.D., metal insert, sealing lip with garter spring and additional dust lip |  | C64D Rotary shaft seal for heavy industry. See pag 22 |



Additional types



DX7

This seal is designed for use in presence of pressure, up to max 6 Bar. The radial force on the shaft caused by the fluid in pressure is reduced, and as a consequence there is a reduction of temperature. The absence of external metal avoids the possibility to damage the seal housing. This type of seal needs a retaining plate.



AX-7M

This seal is designed for use in presence of pressure, up to max 6 Bar. A metallic band is inserted in the back of the seal. It is assembled in open housings and does not need a retaining plate. This profile is flexible and easy to assemble, ensuring stability in the housing.



AX - 3M

This seal does not need the retaining plate. The rubber seal has a flexible metal band in its shoulder, which makes it resistant, elastic and easy to install. This seal can be assembled in open housings and has a better resistance for possible misalignments. The spring is protected.



AX - 3ML

Same profile as the AX-3M but this one has a rigid metal case inside the shoulder, instead of the flexible metal band.



DXVT

Produced with a high resistance rubberised fabric back, it allows a higher ring stiffness compared to normal seals. As an alternative solution to avoid shavings pollution in case of underdimensioned or reduced metallic parts.



C59D

Interchangeable with Garlock 59 seal, it is mostly used in steel mill plants or wherever a strong seal is necessary. This profile has a flexible rubber sealing lip and a metallic cage back with a finger-spring. The seal withstands a pressure of max 1 Bar.



AX - GL

Originally designed to withstand large misalignments of some millimeters in static conditions, this seal can also be used for dynamic seal with limited radial speed. The profile has a metallic cage inside its shoulder, with a spring that ensures the constant load operation.

Elastomer je polimer koji ima osobinu elastičnosti. Za izradu elastičnog dijela radijalnog zaptivnog prstena najčešće se upotrebljavaju četiri osnovna elastomera i to:

1. akrilonitril-butadien elastomer
2. poliakrilatni elastomer
3. silikonski elastomer
4. fluor elastomer – viton

1. Nitrilna guma

Zbog svojih izuzetnih osobina (dobrih svojstava i niske cene) ovaj materijal nalazi najširu primenu u proizvodnji radijalnih zaptivnih prstenova.

Proizvod je veoma dobrih fizičko - mehaničkih svojstava, primenu nalazi u širokom dijapazonu temperatura eksploatacije. Ipak na radnim temperaturama iznad 100 °C, treba posebnu pažnju posvetiti ostalim uticajnim elementima, kao što su vrsta ili vrste zaptivenog materijala i broja obrtaja osovine.

Zaptivači izrađeni od ovog materijala ugrađuju se, u automobilskoj industriji, u motore, menjačke kutije, točkove itd. Ne preporučuju se međutim, za ugradnju kod radilica i kod bregastih osovina motora.

2. EPDM (FP)

EPDM je crne boje, jako otporan na uticaj vode, ozona, hemijske supstance (kiseline, baze i njihovi rastvori) i do 150 °C. Primenjuje se uglavnom u prehrambenoj industriji (mleko, masti, sokovi itd.). Ne sme doći do dodira sa motornim uljima i mastima.

3. Silikonska guma (Si)

Semerinzi izrađeni od ovog materijala nose oznaku Si. Hemijska svojstva materijala omogućuju primenu u širokom dijapazonu radnih temperatura. Vrlo je elastičan i otporan na delovanje raznih motornih ulja i pri višim temperaturama eksploatacije. Do zaptivnih mesta poželjno je da dopire atmosferski vazduh inače elastomer se raspada.

Zbog komplikovanije tehnologije prerade i skupljeg materijala, veća je i cena izrađenog proizvoda u odnosu na nitrilnu gumu.

U automobilskoj industriji najčešće se ugrađuju u motore, na radilice i bregaste osovine.

4. Fluorisana guma (FP)

Ovaj materijal je najbliži pojmu idealnog zaptivnog materijala. Posедуje izvanrednu hemijsku otpornost čak i kod niskih i visokih (od -30 °C do +280 °C) temperatura. Najpoznatija guma, na tržištu, izrađena na bazi fluor - kaučuka je VITON, američkog proizvođača Du Pont. Najveću prepreku redovne upotrebe čini visoka cena elastomera.

Metalni noseći deo semeringa mora da bude napravljen od nerđajućeg metala. Najčešće se koriste:

Chrome Nickel AISI 304 (DIN 1.4301 - V2A)

Chrome Nickel Molybdenum AISI 316 (DIN 1.4401 - V4A).

Metalna opruga se pravi od sledećih vrsta nerđajućih metala:

SAE 1074 (DIN 17223)

AISI 302 (DIN 1.4300)

AISI 316 (DIN 1.4401 - V4A)