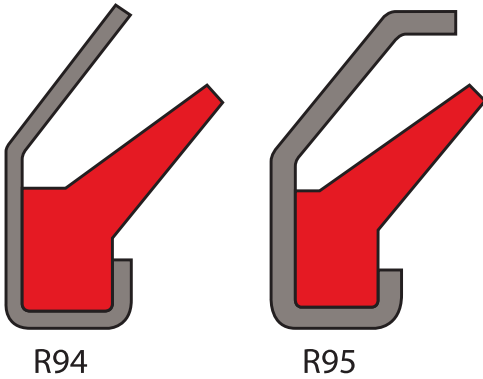


axial seal R94 & R95

seal spec



description

the R94 & R95 are axial seals consisting of two sections, one coated metal ring and one mould-vulcanized elastomer sealing element. the metal ring protects the elastomer seal against damage, serves as a stand and support for the elastomer seal and simultaneously acts as a flinger. the elastomer seal is not firmly bonded to but stretched over the metal ring and is additionally held by the axial flange.

application



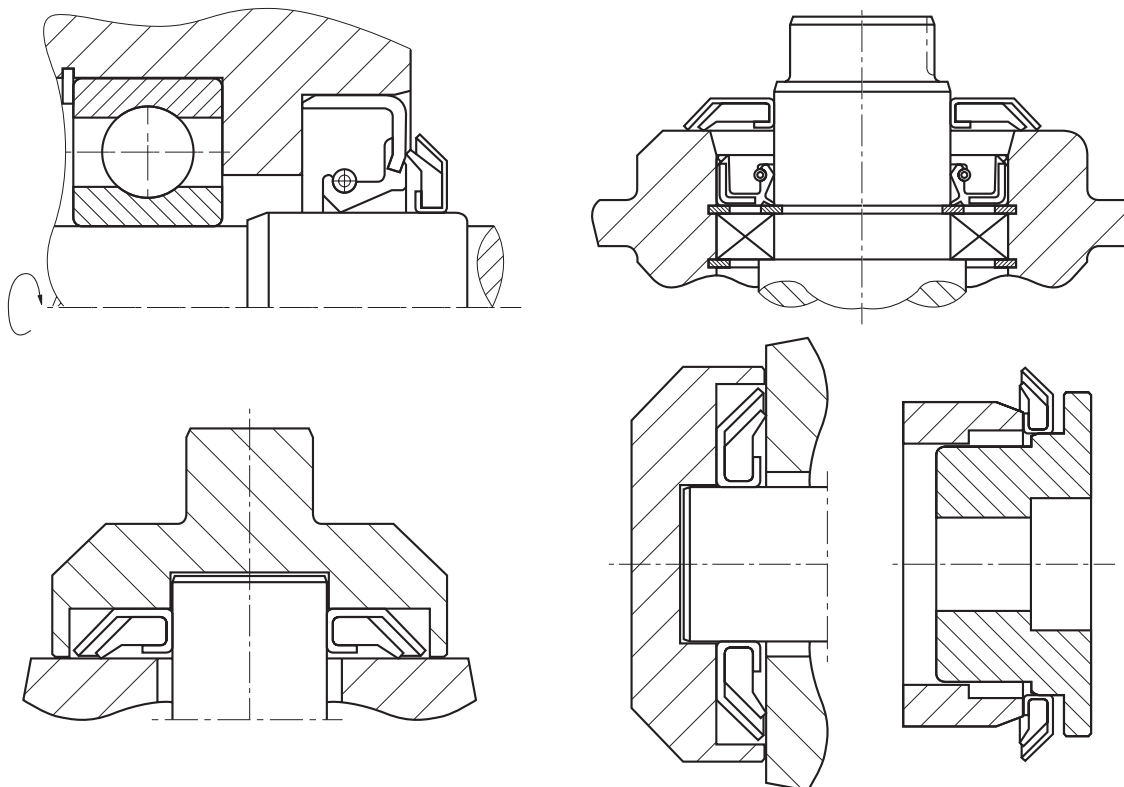
category of profile

molded/standard/trade product only

single acting rotary shaft seal

area of application

the R94 & R95 axial seals are mainly used in combination with rotary shaft seals. they are applied as modular sealing elements affixed in series to seal against dirt, dust, grease and water spray from the outset. the R94 & R95 axial seals have been successfully used in drive technology and mechanical engineering for many years, e.g. in electric engines, transmissions, pumps, power saws, prop shafts, wheel hubs and axles, agricultural machinery, construction machinery, machine tools, roller bearing housings and washing machines.



**advantages**

- simple sealing element with narrow installation width
- sealing against grease, dirt, dust and water spray
- additional sealing function due to the centrifugal action of the metal ring
- good in combination with rotary shaft seals
- low demands on the sliding surface with regard to the surface quality
- simple installation
- the metal ring protects the elastomer sealing element against damage
- the friction decreases with increasing peripheral speed as a result of centrifugal force
- good dynamic sealing action
- no additional axial stop required

function

the R94 & R95 axial seals fits tightly on the shaft (press fit) and must be installed at a precisely defined distance from the metal sliding surface to guarantee the elastomer sealing element.

in rotation, the sealing lip rubs axially against the metal sliding surface at the contact pressure resulting from the selected prestress. the required sealing function is thus achieved. the total axial contact pressure results from the prestress in the installation housing, the geometry of the sealing lip as well as the elasticity and tensile properties.

the R94 & R95 axial seals creates a centrifugal effect which contributes to the good sealing function. Dust, dirt and water spray from the outside are, for the most part, flung away.

with increasing peripheral speeds, the centrifugal force pushes the elastomer sealing element outwards which decreases the contact pressure. above a certain peripheral speed the sealing lip lifts up from the metal sliding surface completely. the R94 & R95 axial seals then operates only as a gap ring and flinger.

the R95 additionally functions as a labyrinth seal. to achieve this, the sliding surface must be provided with a groove in which the extended metal ring can run. the R95 provides additional protection due to the labyrinth in the housing groove and is used for applications with very high demands.

media

NBR: good chemical resistance to many mineral oils and greases

FPM: mineral oils and greases, synthetic oils and greases, engine, transmission and ATF oils, fuels, aromatic and chlorinated hydrocarbons, brood chemicals and solvents resistance.

operating parameters & material

sealing element*	material	temperature	max. surface speed	max. pressure***	profile
	energizer				
s-mart NBR (70 shore A)	deep-drawn, coated steel 1.0204 (SAE 1008), galvanised	-40 °C ... +100 °C	12 m/s	-	R94-A & R95-A
s-mart FKM (70 shore A)	rust & acid-resistant steel 1.4301 (SAE 304)	-30 °C ... +180 °C			R94-V & R95-V

the stated operation conditions represent general indications. it is recommended not to use all maximum values simultaneously.

surface speed limits apply only to the presence of adequate lubrication film.

* special grades and other materials (ACM, EACM, EPDM, HNBR, VMQ) on request

** metal insert, and spring as well, can be supplied in different materials on request.

*** pressure: designed for pressure less operation The above-mentioned operating parameters are maximum values and may not occur simultaneously. each is dependent on the other operating parameters.

sliding surface

the R94 & R95 axial seals runs against a sliding surface placed at right angles to the shaft, e.g. the flange cover or end wall of a bearing housing. the metal air side of a rotary shaft seal (type R62, R64) is often also used as a sliding surface. the demands on the sliding surface are lower than with rotary shaft seals.

the sliding surface should have a machine finished surface with a surface quality of max. $R_a = 2 \mu\text{m}$ ((adequate for many applications).

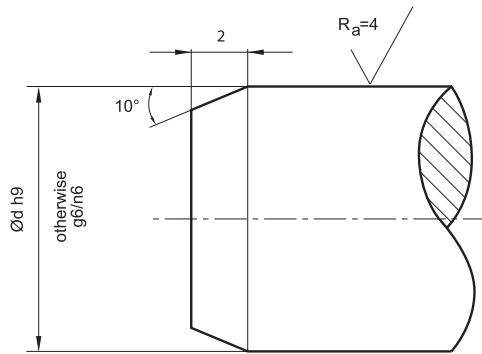
prefabricated injection mould or moulded light-metal alloy parts as well as reshaped sheet steel can also function as sliding surfaces without additional treatment. these should, however, not have any surface abnormalities or faults such as sharp edges, burrs, cavities, corrugation, elevations or damage.

shaft

the shaft should be produced with a tolerance acc. to ISO h9 (or the standard tolerance for roller bearings acc. to ISO g6 or n6) to guarantee the required press fit and good, secure positioning on the shaft. no further axial fixing is necessary.

to achieve the correct prestress of the elastomer seal when installing, it may be advisable to use an axial stop in the form of a shaft shoulder or a retaining ring.

the surface roughness of the shaft should not exceed $R_a = 4 \mu\text{m}$. the shaft should be provided with a 10-20° chamfer to facilitate installation. sharp edges and burrs should be avoided, i.e. the transition should be polished. the sliding surface of the sealing lip should not be above $R_a = 2 \mu\text{m}$. in comparison to other rotary seals The R94 & R95 axial seals are relatively insensitive to eccentricity shaft imbalance and skew of the shaft.



fitting & installation

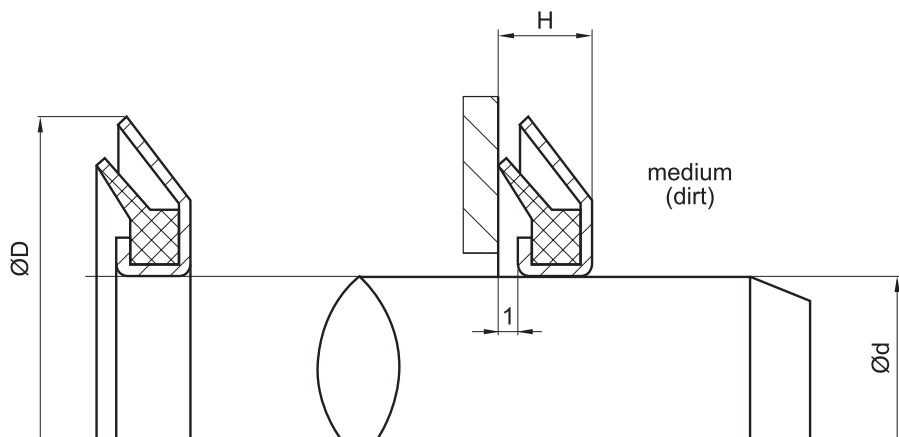
the R94 & R95 axial seals are simple to install. the elastomer sealing element should be greased before installation to improve the dynamic friction coefficient and thus to ensure a longer lifespan (preventing excessive wear due to abrasion). this also avoids adhesion after a longer standstill period.

the R94 & R95 axial seals should be pressed into the correct installation position with the aid of an appropriate installation tool and applying even pressure. to avoid damage, the use of a hammer for installation is not permissible. If there is no provision for an axial stop, the installation tool must be appropriately constructed so that the axial prestress is maintained according to the requirements.

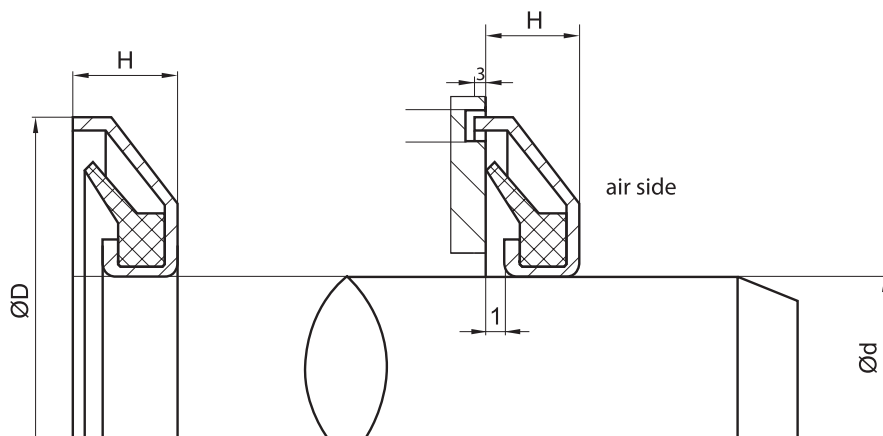
the sealing lip must under no circumstances be damaged or deformed while in storage

seal & housing recommendations R94-A & R94-V

Please note that we are able to produce those profiles to your specific need or any non standard housing. For detail measurements, please see seal-mart catalog...



seal & housing recommendations R95-A & R95-V



don't hesitate to contact our technical department for further information or for special requirements (temperature, speed etc.), so that suitable materials and/or designs can be recommended.