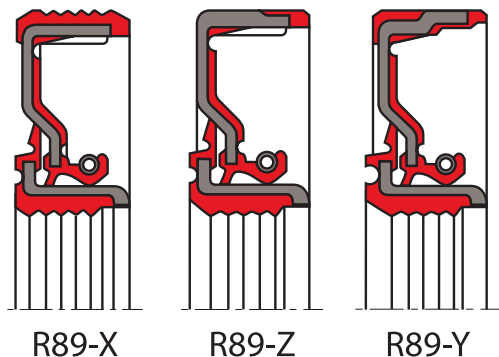


## oil seal R89

## seal spec



### description

the combined rotary shaft lip seal is an assembly which includes a supplementary protection of the radial sealing members with an axial rotary sealing lip integrated into a wear sleeve. the rubberised wear sleeve and radial seal are designed to satisfy either customer's and DIN 3760 (3761) specifications.

### sealing lips design

the sealing lips design corresponds to the latest state of development based on many years of laboratory and field tests. the main radial sealing edge can either be ready moulded (when equipped with TURBO ribs) or trimmed by mechanical cutting. the total radial force of the sealing lip is extremely low thanks to the miniaturisation of the lip profile and the application of smallest possible garter spring. the above miniaturisation is made in order to reduce as much as possible the metal sleeve wear, the friction loss and relevant heat generation.

### application



### R89-X

#### product description

the R89-X is a seal with completely rubber covered outer diameter. two different O.D designs are available: flat rubber sheath as well as wavy, both correctly fitting into H8 bores.

R89-X seal is recommended for use in heavy polluted environments.

both the seal and the sleeve may also be manufactured with different metal insert material as well as different rubber types.

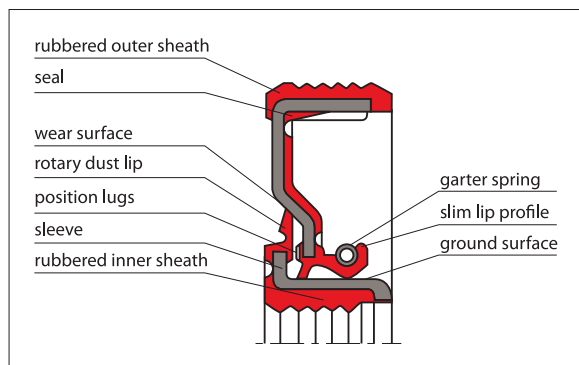


figure 1 R89-X seal details

### advantages

- good static sealing
- compensation of different thermal expansion
- no risk of fretting corrosion
- higher bore surface roughness is allowed
- do not require shaft hardening
- do not require shaft grinding
- modern lip design provides low power loss

### application examples

- transmission systems (e.g. gearboxes)
- pumps
- washing machines
- machinery for industry (e.g. tool machines)
- axles for heavy-duty applications

**technical data**

|              |  |
|--------------|--|
| pressure:    | up to 0.05 MPa                                   |
| temperature: | -40 °C to +200 °C (depending on material)        |
| speed:       | up to 10 m/s (depending on material)             |
| media:       | mineral and synthetic oils (CLP, HLP, APGL etc.) |

**important note:**

the above data are maximum values and cannot be used at the same time, e. g. the maximum operating speed depends on material type, pressure and temperature.

**table 1 materials**

| standard material*     | standard metal insert** | standard spring** |
|------------------------|-------------------------|-------------------|
| s-mart NBR(75 Shore A) | carbon steel            | carbon steel      |
| s-mart FKM(75 Shore A) | carbon steel            | stainless steel   |

\* special grades and other materials (ACM, EACM, EPDM, HNBR, MVQ) on request.

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

remark: these seals are customer tailored products. for more details please contact our technical engineering.

**seal & housing recommendations**

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...

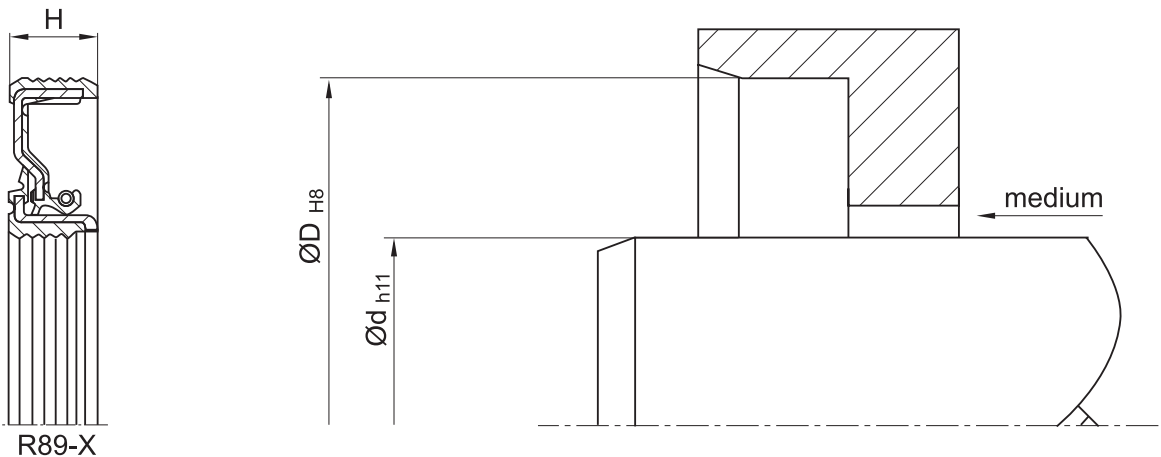


figure 2 installation drawing

**R89-Y & R89-Z****product description**

R89-Y and R89-Z types are radial lip seals with partially rubber covered outer diameter.

the R89-Y type recommended for use in heavy polluted environments and where a good axial retention force is required with a good heat transfer as well. The type R89-Z is recommended for aluminium or soft metal housings that may be scratched at assembly by metal frame of the seal.

R89-Y and R89-Z types - housing as per DIN 3760-3761

the design of the radial seal corresponds to R89-Y and R89-Z types  
the sleeve remains the same for all kind of radial seal design.

**advantages**

- good static sealing
- compensation of different thermal expansion
- higher bore surface roughness is allowed
- do not require shaft treatment (hardening and grinding)
- modern lip design provides low power loss
- good heat transfer to outside
- quick servicing (no shaft rework required)

**applications examples**

- transmission systems (e.g. gearboxes)
- pumps
- machinery industry (e.g. tool machines weaving machinery)
- axle hubs and axle for heavy-duty applications



technical data

|              |  |
|--------------|--|
| pressure:    | up to 0.05 MPa                                   |
| temperature: | -40°C to +200°C (depending on material)          |
| speed:       | up to 10 m/s (depending on material)             |
| media:       | mineral and synthetic oils (CLP, HLP, APGL etc.) |

important note:  
the above data are maximum values and cannot be used at the same time, e. g. the maximum operating speed depends on material type, pressure and temperature.

table 2 materials

| standard material*      | standard metal insert** | standard spring** |
|-------------------------|-------------------------|-------------------|
| s-mart NBR (75 Shore A) | carbon steel            | carbon steel      |
| s-mart FKM (75 Shore A) | carbon steel            | stainless steel   |

\* special grades and other materials (ACM, EACM, EPDM, HNBR, MVQ) on request.  
\*\* metal insert, and spring as well, can be supplied in different materials on request.  
remark: these seals are customer tailored products. for more details please contact our technical engineering.

seal & housing recommendations  
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...

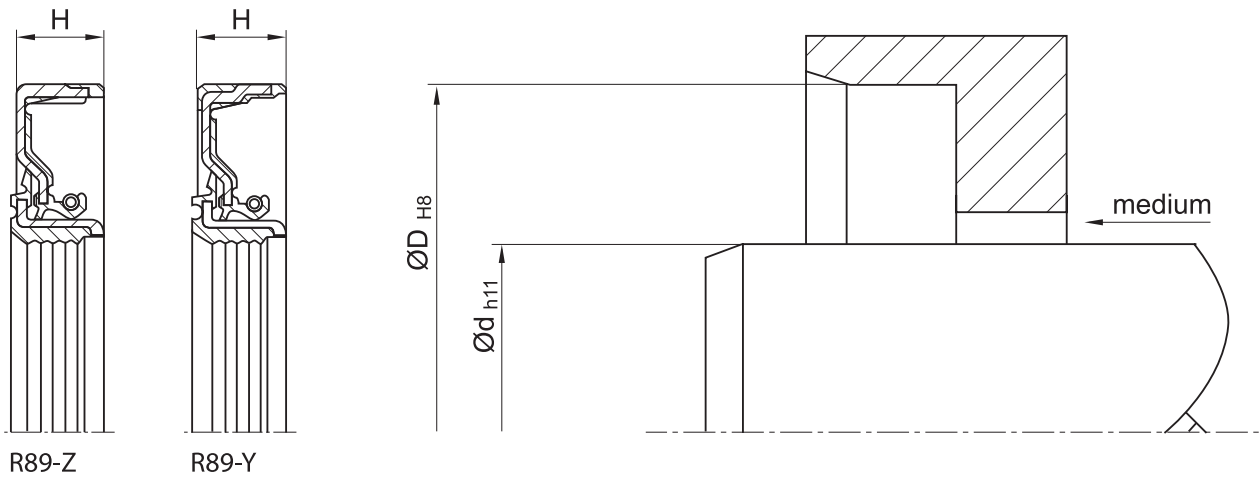


figure 3 Installation drawing

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.