TURCON® VARISEAL® HF

- Axial sealing -

- For high pressure sealing and high temperature sealing -

- Turcon® -

■ Turcon® Variseal® HF

Description

Turcon® Variseal® **HF** is the standard seal for axial (face) applications. The seal has the same high sealing load as Variseal® H and is available for both internal and external pressure. The use of the heavy helical spring makes Variseal® HF the best choice for vacuum, gas, and low temperature flange and cover applications.

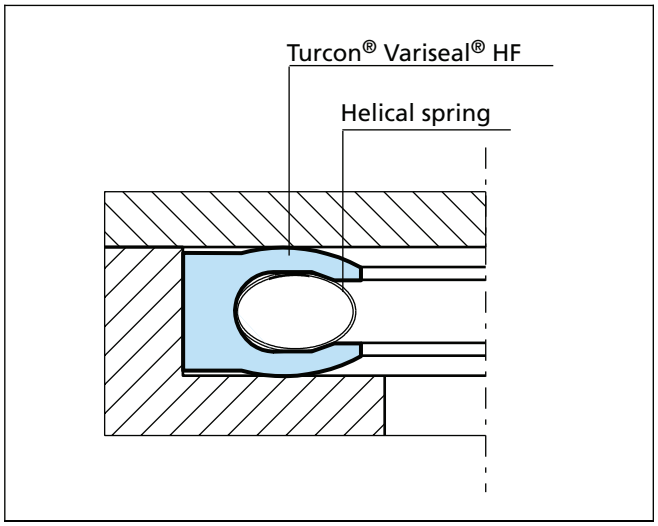

Figure 45 Turcon® Variseal® HF

Advantages

- High sealing pressure
- Excellent sealability in gas and fluid applications
- Can handle rapid changes in temperature
- Good sealability on non-ideal surfaces
- Easy installation
- Unlimited shelf life

Technical data

Operating pressure:	Max. static load: 80 MPa
Speed:	Static to slow rotating or pivoting movements
Temperature:	-200 °C to +260 °C
Medium:	Virtually all fluids, chemicals and gases
Note:	Please contact us for applications outside these permissible application parameters.

Table XXXIX Installation dimensions

Series No.	Groove outside diameter **d7** H11		Groove width **b4**	Groove depth		Radius **r1**
	Recommended range	Extended range[1)]	min.	h	Tol.	max.
DVE0	10 - 13.9	10 - 40	2.4	1.45	+0.03	0.4
DVE1	14 - 24.9	13 - 200	3.6	2.25	+0.05	0.4
DVE2	25 - 45.9	18 - 400	4.8	3.10	+0.08	0.6
DVE3	46 - 124.9	28 - 700 *	7.1	4.70	+0.1	0.8
DVE4	125 - 999.9 **	45 - 1,000 **	9.5	6.10	+0.15	0.8
DVE5	1,000 - 2,500 ***	110 - 2,500 ***	15.0	9.50	+0.2	0.8
DVL0	3 - 9.9	3 - 40	2.4	1.45	+0.03	0.4
DVL1	10 - 19.9	8 - 200	3.6	2.25	+0.05	0.4
DVL2	20 - 39.9	12 - 400	4.8	3.10	+0.08	0.6
DVL3	40 - 119.9	20 - 700 *	7.1	4.70	+0.1	0.8
DVL4	120 - 999.9 **	35 - 1,000 **	9.5	6.10	+0.15	0.8
DVL5	1,000 - 2,500 ***	80 - 2,500 ***	15.0	9.50	+0.2	0.8

* For diameters above 600 mm b_4 min. = 8.0 mm
** For diameters above 600 mm b_4 min. = 11.0 mm
*** For diameters above 1000 mm b_4 min. = 18.0 mm

[1)] Available on request

■ Installation recommendations for Turcon® Variseal® HF flange seals for internal pressure

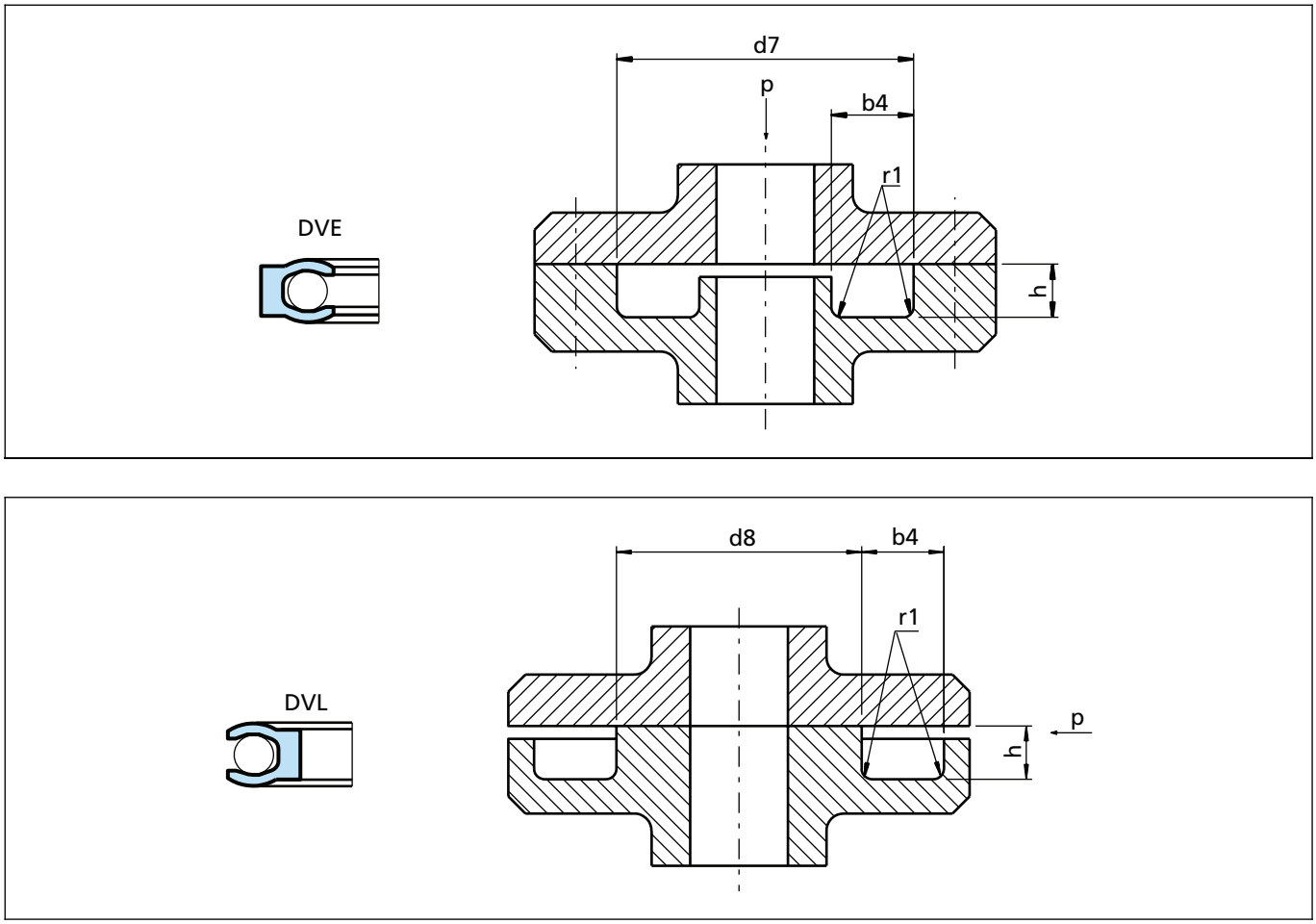

Figure 46 Installation drawing

Ordering example

Turcon Variseal® HF for internal pressure, Series DVE3
Groove outside diameter: d7 = 80.0 mm
TSS Part No.: DVE300800
* For diameters ≥ 1,000 mm multiply only by factor 1.
Example: DVE5 for diameter 1200 mm.
TSS Article No.: DVE5**X1200** - T05S.

Standard materials

Seal ring: Material code **T05**
Spring material: Spring code **S** (stainless steel), Material No. 1.4310 (AISI 301)

TSS Article No.	DVE3	0	0800	-	T05	S
TSS Series No.						
Type (Standard)						
Groove out. diam. x 10*						
Quality index (Standard)						
Material code - Seal ring						
Material code - Spring						

For further details in Turcon® Variseal® HF, please refer to our Variseal catalogue.

■ Quality Criteria

The cost-effective use of seals and bearings is highly influenced by the quality criteria applied in production. Seals and bearings from Trelleborg Sealing Solutions are continuously monitored according to strict quality standards from material acquisition through to delivery.

Certification of our production plants in accordance with international standards QS 9000 / ISO 9000 meets the specific requirements for quality control and management of purchasing, production and marketing functions.

Our quality policy is consistently controlled by strict procedures and guidelines which are implemented within all strategic areas of the company.

All testing of materials and products is performed in accordance with accepted test standards and specifications, e.g. random sample testing in accordance with DIN ISO 2859, part 1.
Inspection specifications correspond to standards applicable to individual product groups (e.g. for O-Rings: ISO 3601).

Our sealing materials are usually produced free of chlorofluorinated hydrocarbons and carcinogenic elements.

The tenth digit of our part number defines the quality characteristics of the part. A hyphen indicates compliance with standard quality criteria outlined in this catalogue. Customer-specific requirements are indicated by a different symbol in this position. Customers who require special quality criteria should contact their local Trelleborg Sealing Solutions sales office for assistance. We have experience in meeting all Customer quality requirements.

■ Storage and shelf life

Seals and bearings are often stored as spare parts for prolonged periods. Most rubbers change in physical properties during storage and ultimately become unserviceable due, e.g., to excessive hardening, softening, cracking, crazing or other surface degradation. These changes may be the result of particular factors or combination of factors, such as the action of deformation, oxygen, ozone, light, heat, humidity or oils and solvents.

With a few simple precautions, the shelf life of these products can be considerably lengthened.
Fundamental instructions on storage, cleaning and maintenance of
elastomeric seal elements are described in international standards, such as:

DIN 7716 / BS 3F68:1977,

ISO 2230, or DIN 9088

The standards give several recommendations for the storage and the shelf life of elastomers, depending on the material classes.

The following recommendations are based on the several standards and are intended to provide the most suitable conditions for storage of rubbers. They should be observed to maintain the optimum physical and chemical values of the parts:

Heat

The storage temperature should preferable be between +5 °C and +25 °C. Direct contact with sources of heat such as boilers, radiators and direct sunlight should be avoided.
If articles are taken from low temperature storage, care should be taken to avoid distorting them during handling at that temperature as they may have stiffened. In this case the temperature of the articles should be raised to approximately +20 °C before they are put into service.

Humidity

The relative humidity in the store room should be below 70 %. Very moist or very dry conditions should be avoided. Condensation should not occur.

Light

Elastomeric seals should be protected from light sources, in particular direct sunlight or strong artificial light with an ultraviolet content. The individual storage bags offer the best protection as long as they are UV resistant.
It is advisable to cover any windows of storage rooms with a red or orange coating or screen.

Radiation

Precaution should be taken to protect stored articles from all sources of ionising radiation likely to cause damage to stored articles.

Oxygen and ozone

Where possible, elastomeric materials should be protected from circulating air by wrapping, storage in airtight containers or by other suitable means.
As ozone is particular deleterious to some elastomeric seals, storage rooms should not contain any equipment that is capable of generating ozone, such as mercury vapour lamps, high voltage electrical equipment, electric motors or other equipment which may give rise to electric sparks or silent electrical discharges. Combustion gases and organic vapour should be excluded from storage rooms alas they may give rise to ozone via photochemical processes.

Deformation

Elastomeric materials should, wherever possible, be stored in a relaxed condition free from tension, compression or other deformation. Where articles are packed in a strain-free condition they should be stored in their original packaging.

Contact with liquid and semi-solid materials

Elastomeric seals should not be allowed to come into contact with solvents, oils, greases or any other semi-solid materials at any time during storage, unless so packed by the manufacturer.

Contact with metal and non-metals

Direct contact with certain metals, e.g. manganese, iron and particularly copper and its alloys, e.g. brass and compounds of these materials are known to have deleterious effects on some rubbers. Elastomeric seals should not be stored in contact with such metals.
Because of possible transfer of plasticisers or other ingredients, rubbers must not be stored in contact with PVC. Different rubbers should preferably be separated from each other.

Cleaning

Where necessary, cleaning should be carried out with the aid of soap and water or methylated spirits. Water should not, however, be permitted to come into contact with fabric reinforced components, bonded seals (because of corrosion) or polyurethane rubbers. Disinfectants or other organic solvents as well as sharp-edged objects must not be used. The articles should be dried at room temperature and not placed near a source of heat.

Shelf life and shelf life control

The useful life of a elastomeric seals will depend to a large extend on the type of rubber. When stored under the recommended conditions (above sections) the below given shelf life of several materials should be considered.

AU, thermoplastics	4 years
NBR, HNBR, CR	6 years
EPDM	8 years
FKM, VMQ, FVMQ	10 years
FFKM, Isolast®	18 years
PTFE	unlimited

Elastomeric seals should be inspected after the given period. After this giving an extension period is possible.

Rubber details and components less than 1.5 mm thick are liable to be more seriously affected by oxidation degradation even when stored in satisfactory conditions as recommended. Therefore they may be inspected and tested more frequently than it is mentioned above.

Rubber details / seals in assembled components

It is recommended that the units should be exercised at least every six months and that the maximum period a rubber detail be allowed to remain assembled within a stored unit, without inspection, be a total of the initial period stated above and the extension period. Naturally this will depend on the design of the unit concerned.